



**PURCHASING DEPARTMENT
INVITATION TO BID
05ITBR43665YC
(Re-BID)
FIRE APPARATUS
TRACTOR DRAWN ARIAL
(TDA)
FIRE APPARATUS PUMPER
(SIDE MOUNT PUMP PANEL)
For
FIRE DEPARTMENT**

**BID DUE TIME AND DATE: Wednesday, October 26, 2005, at 11:00 A.M.,
PURCHASING CONTACT: Al Micah Phillips at (404) 730-4214**

E-MAIL: almicah.phillips@co.fulton.ga.us

**LOCATION: FULTON COUNTY PURCHASING DEPARTMENT
130 PEACHTREE STREET, S.W., SUITE 1168
ATLANTA, GA 30303**

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SECTION 1

INVITATION TO BID FIRE APPARATUS TRACTOR DRAWN ARIAL (TDA) FIRE APPARATUS PUMPER (SIDE MOUNT PUMP PANEL)

1.0 Purpose:

Fulton County is soliciting bids from qualified vendors to provide fire trucks to the Fire Department.

1.1 Description

It is the intent of these specifications to cover the construction and delivery of a newly completed Fire Pumper Vehicle as herein specified. These specifications cover the minimum requirements as to the type of construction, finish, and tests, to which the apparatus must conform, together with certain details as to equipment to be furnished with the vehicle. The apparatus shall conform to all appropriate requirements of the National Fire Prevention Association Standards No. 1901, Current Edition, unless otherwise noted herein.

1.2 Bid Document

This document and supporting documents can be downloaded at the Fulton County Website, <http://www.co.fulton.ga.us/> under "Bid Opportunities".

1.3 Term of Contract:

The term of the contract will be from award date through twelve (12) succeeding months from date of award by the Board of Commissioners. Fulton County reserves the right of an option of five (5) additional twelve (12) month renewal period pending availability of appropriated funding, contractor compliance with county rules and policies, satisfactory performance reports and Board of Commissioners' approval. Option year price increases shall not exceed the consumer price index (CPI) as published by the Bureau of Labor Statistics of the U.S. Department of Labor with particular reference to the average shown on such index for "all items" for the Atlanta Metropolitan area.

1.4 No Contact Provision

It is the policy of Fulton County that the evaluation and award process for County contracts shall be free from both actual and perceived impropriety, and that

contacts between potential vendors and County officials, elected officials and staff regarding pending awards of County contracts shall be prohibited.

- A. No person, firm, or business entity, however situated or composed, obtaining a copy of or responding to this solicitation, shall initiate or continue any verbal or written communication regarding this solicitation with any County officer, elected official, employee, or designated County representative, between the date of the issuance of this solicitation and the date of the County Manager's recommendation to the Board of Commissioners for award of the subject contract, except as may otherwise be specifically authorized and permitted by the terms and conditions of this solicitation.
- B. All verbal and written communications initiated by such person, firm, or entity regarding this solicitation, if same are authorized and permitted by the terms and conditions of this solicitation, shall be directed to the Purchasing Agent.
- C. Any violation of this prohibition of the initiation or continuation of verbal or written communications with County officers, elected officials, employees, or designated County representatives shall result in a written finding by the Purchasing Agent that the submitted Bid or proposal of the person, firm, or entity in violation is "non-responsive", and same shall not be considered for award.

1.5 Bid Contact

Any questions or suggestions regarding this ITB should be submitted in writing to the Purchasing Department contact person, Al Micah Phillips, Chief Assistant Purchasing Agent, almicah.phillips@co.fulton.ga.us. Any response made by the County will be provided in writing to all bidders by addendum. No verbal responses shall be authoritative. Inquiries must be submitted in writing to:

**Fulton County Purchasing Department
Attn: Al Micah Phillips
130 Peachtree Street, S.W. Suite 1168
Atlanta, GA 30303
Phone: (404) 730-4214
Fax: (404) 893-1736
Reference Bid # 05ITBR43665YC**

1.6 Bid Opening

Bids will be opened in public and read aloud on **Wednesday, October 26, 2005 at 11:00 A.M., local time** in the Fulton County Purchasing Department's bid room, located at 130 Peachtree Street, S.W., Atlanta, Georgia 30303. Bids received

after 11:00 A.M., will be considered late and will be returned to the bidder unopened. Bidders may, at their discretion, attend the bid opening. **Bidders are to submit two (2) copies, one (1) originally signed and one (1) copy.**

1.7 Proposal Due Date

All Bids are due in the Purchasing Department of Fulton County located in the Public Safety Building, Suite 1168, 130 Peachtree Street, S.W., Atlanta, Georgia 30303 on or before July 6, 2005 at 11:00 A.M., legal prevailing time. All submitted bids will be time and date stamped according to the clock at the front desk of the Fulton County Purchasing Department. Any bid received after this appointed schedule will be considered late and subject to be returned unopened to the bidder. The bid due date can be changed only by addendum. Bids shall clearly indicate the legal name, address, and telephone number of the proposer (company, firm, partnership, individual). Bids shall be signed above the typed or printed name and title of the signer. The signer shall have the authority to bind the proposer to the submitted proposal. ***The bid number must be clearly visible on all bid packages submitted.***

1.8 Delivery Requirements

Any bid received after the above stipulated due date and time will not be considered and will be rejected and returned. It shall be the sole responsibility of the bidder to have his/her bid delivered to the Fulton County Department of Purchasing for receipt on or before the above stipulated due date and time. If a bid is sent by U.S. Mail, the bidder shall be responsible for its timely delivery to the Department of Purchasing.

1.9 Basis of Award

The Contract will be awarded to the lowest responsive, responsible bidder(s), if awarded.

All Bids must be made on the Bid forms contained herein. The Bid shall be enclosed in a sealed envelope, addressed to Department of Purchasing, Fulton County Public Safety Building, 130 Peachtree Street, S.W., Suite 1168 Atlanta, Georgia 30303 and labeled "Bid for ITB-05ITBR43665YC."

SECTION 2

FULTON COUNTY PURCHASING DEPARTMENT

BID GENERAL REQUIREMENTS

05ITBR43665YC

**FIRE APPARATUS TRACTOR DRAWN ARIAL
(TDA)**

FIRE APPARATUS PUMPER (SIDE MOUNT PUMP PANEL)

2.0 The following information pertains to the submission of a Bid to Fulton County, and contains instructions on how Bids must be presented in order to be considered. Listed below are the requirements for all Bidders interested in doing business with Fulton County.

1. The Bid sheets included in this Invitation to Bid ("Bid") must be fully completed and returned with the Bid unless otherwise specified in writing by the Purchasing Department. Type or neatly print the date, company name, and the full legal name and title of the person(s) signing the Bid in the place provided at the bottom of each Bid sheet. Any additional sheets submitted must contain the same signature and Bidder information.
2. Original signature(s) must appear on each page of the Bid document. All signatures must be executed by person(s) having contracting authority for the Bidder
3. Absolutely no fax Bids or reproduction Bids will be accepted, except that photocopies may be submitted in addition to the original when multiple copies of the Bid are specifically requested in the solicitation
4. The envelope in which the Bid response is submitted must be sealed and clearly labeled with the bid number, project title, due date and time, and the name of the company or individual submitting the proposal. Bids must be received by the opening date and time shown on this Bid in order to be considered. The Purchasing Agent has obligation to consider Bids which are not in properly marked envelopes. Contract Compliance submittals shall be submitted in a separated sealed envelope or package.
5. The original and the required number of copies of the Bid must be returned to:

Fulton County Purchasing Agent
Fulton County Purchasing Department
130 Peachtree Street, S.W., Suite 1168
Atlanta, Georgia 30303

Any inquiries, questions, clarifications or suggestions regarding this solicitation should be submitted in writing to the Purchasing Contact Person. Contact with any other County personnel in regard to a current solicitation is strictly prohibited in accordance with Fulton County "No Contact" Show information and prices in the format requested. Prices are to be quoted F.O.B. Destination, and must include all costs chargeable to the Contractor executing the Contract, including taxes. Unless otherwise provided in the Contract, Fulton County shall have no liability for any cost not included in the price. The Contractor shall provide Fulton County the benefit through a reduction in price of any decrease in the Contractor's costs by reason of any tax exemption based upon Fulton County's status as a tax-exempt entity.

6. All prices Bid must be audited by the Bidder to ensure correctness before the Bid is submitted. The Bidder is solely responsible for the accuracy of information placed on a Bid sheet, including prices. Clerical or mathematical error is insufficient to void a successful Bid but a Bidder may withdraw a sealed Bid prior to opening without a penalty.
7. All prices must be submitted in the format requested and less all trade discounts. When multiple items are being Bid, Bidder must show both the unit price and the total extended price for each item. When applicable, the Bidder must include an additional lump sum Bid for groups or items. In the event a Bidder is offering an additional discount on groups of items, Bidder must indicate the total lump sum Bid for the particular group of items before any extra discount, the amount of extra discount, and the net total for the particular group. In the event of an extension error, unit pricing shall prevail.
8. By submitting a signed Bid, Bidder agrees to accept an award made as a result of that Bid under the terms and conditions spelled out in the Bid documents. In the event of a conflict between the different Bid documents, the County's cover Contract (if used) shall have precedence, followed in order by the Invitation to Bid Purchase Order, Bid, Contractor's Warranty Agreement, Maintenance Agreement, and/or other Contractor provided agreements.
9. A Bidder may submit only one (1) Bid response for each specific Bid solicitation unless otherwise authorized in the specifications.
10. All prices submitted by the Bidder to Fulton County must be guaranteed by the authorized person(s) against any price increase for the time period designated in the Bid specifications, and Fulton County must be given the benefit of any price decrease occurring during such designated time period.

11. All items Bid must be new. Used, rebuilt and refurbished items will not be considered unless specifically authorized by Fulton County in the written specifications.
12. All Bidders must specify in the Bid response the earliest actual delivery date for each item unless otherwise specified in writing by Fulton County. The delivery date may be a factor in deciding the Bidder's capability to perform.
13. A successful Bidder's delivery ticket(s) and invoice(s) must list each item separately and must show Fulton County's purchase order number as well as the proper department and address to which delivery was made, as listed on the purchase order or in the Bidder's contract with Fulton County.
14. Unless clearly shown as "no substitute" or words to that effect, any items in this invitation to Bid which have been identified, described or referenced by a brand name or trade name are for reference only. Such identification is intended to be descriptive but not restrictive, and is to indicate the general quality and characteristics of products that may be offered. Each item Bid must be individually identified as to whether it is a specified item or an equivalent item by typing or printing after the item(s): The brand name; model or manufacturer's number, or identification regularly used in the trade. Deviations from the specifications must be clearly and fully listed on the Bid sheet, including photographs or cuts, specifications, and dimensions of the proposed "alternate". Fulton County is the sole judge of "exact Equivalent: or " alternate". The factors to be considered are function, design, materials, construction, workmanship, workmanship finishes, operating features, overall quality, local services facilities, warranty terms and service and other relevant features of item(s) Bid.
15. For all Bids, Fulton County reserves the right to request representative samples. If requested, samples must be delivered at the Bidder's cost within three (3) business days. Samples are submitted at the risk of the Bidder and may be subjected to destructive tests by Fulton County. Samples must be plainly tagged with Fulton County's Bid number, item name, manufacturer, and the name of the Bidder.
16. Item(s) Bid must be complete and ready to operate. No obvious omissions of components or necessary parts shall be made even though the specifications may not detail or mention them. Unit(s) must be furnished with factory installed equipment and must be comparable with the basic form, fit, and functional requirements which are all to be included in the base price as well as any other equipment included as standard by the manufacturer or generally provided to the buying public.

17. All successful Bidders must assume full responsibility for all item(s) damaged prior to F.O.B. Destination delivery and agree to hold harmless Fulton County of all responsibility for prosecuting damage claims.
18. All successful Bidders must assume full responsibility for replacement of all defective or damaged goods within thirty (30) days of notice by Fulton County of such defect or damage.
19. All successful Bidders must assume full responsibility for providing or ensuring warranty service on any and all items including goods, materials, or equipment provided to the County with warranty coverage. If a successful Bidder is not the manufacturer, all manufacturer's warranties must be passed through to Fulton County. The Bidder and not Fulton County is responsible for contacting the manufacturer of the warranty service provided during the warranty period and supervising the completion of the warranty service to the satisfaction of Fulton County.
20. As a successful Bidder providing any equipment which requires fitting and assembly the Bidder shall be solely responsible for such installation being performed by a manufacturer's authorized or approved servicer an experienced worker, utilizing workmanship of the highest caliber. The Bidder must verify all dimensions at the site, shall be responsible for their correctness, and shall be responsible for the availability of replacement parts when specified in writing by Fulton County in the specifications, purchase order, or other contract.
21. A successful Bidder is solely responsible for disposing of all wrappings, crating, and other disposable material upon deliver of item(s).
22. All Bidders are required to be authorized distributors or regularly engaged in the sale or distribution of the type of goods, materials, equipment or services for which the Bidder is submitting a Bid response in addition, all Bidders are required to provide Fulton County with three (3) written references documenting the successful completion of Bids or contracts for the types of items including goods, materials, equipment, or services for which the Bidder is submitting a Bid response. In instances where a Bidder has never supplied such goods, material, equipment, or services before, the Bidder must submit with the Bid response a statement and supporting documentation demonstrating such expertise, knowledge, or experience to establish the Bidder as a responsible Bidder, capable of meeting the Bid requirements should an award be made. No exceptions to this provision will be made unless authorized in the Bid specifications.
23. Bidders may be required to furnish evidence that they maintain permanent places of business of a type and nature compatible with their Bid proposal, and are in all respects competent and eligible vendors to fulfill the terms of

the specifications. Fulton County may make such investigations as it deems necessary to determine the ability of the Bidder to perform such work, and reserves the right to reject any Bidder if evidence fails to indicate that the Bidder is qualified to carry out the obligation of the Contract and to complete the work satisfactorily.

24. All Bidders must comply with all Fulton County Purchasing laws, policies, and procedures, non-discrimination in contracting and procurement ordinances, and relevant state and federal laws including but not limited to compliance with EEOC hiring guidelines and requirements under the Americans with Disabilities Act. Successful Bidder must obtain all permits, licenses, and inspections as required and furnish all labor, materials, insurance, equipment, tools, supervision, and incidentals necessary to accomplish the work in these specifications.
25. If a successful Bidder is unable or unwilling to enter into a Contract with Fulton County subsequent to being granted an award, or who fails to perform in accordance with the Bid specifications the Bidder will be subject to damages and all other relief allowed by law.
26. Successful Bidders contract directly with Fulton County and are the party or parties obligated to perform. Contracts may not be assigned and any failure to perform the Contract in accordance with the specifications will constitute a breach of Contract and may result in a Bidder being found to be "non-responsive" in the future.
27. In case of default by the successful Bidder, Fulton County may procure the articles for services from another source and hold the successful Bidder responsible for any resulting excess cost.
28. The County may award any Bid in whole or in part to one or more vendors or reject all Bids and/or waive any technicalities if it is in the best interests of the County to do so. In the event that all Bids are not rejected, Bids for items including goods, materials, equipment, and services will be awarded to the lowest "responsible" Bidder(s) as determined by Fulton County. Submitting the lowest Bid, as published at the Bid opening, does not constitute an award or the mutual expectation of an award of a Contract and purchase order. For purposes of this notice and the attached Bid sheets, a purchase order is a Contract to provide items including goods, materials, equipment, and services and is intended to have the full force and effect of a Contract. A breach of the terms and conditions of a purchase order constitutes a breach of Contract.
29. Bids for projects that are solicited pursuant to the Georgia Local Government Public Works Construction Law (O.C.G.A 36-91-1 et seq) may withdrawn as follows:

Competitive sealed Bids (Bid) may not be revoked or withdrawn until 60 days after the time set by the governmental entity for opening of Bids. At the end of this time period the Bid will cease to be valid, unless the Bidder provides written notice to the County prior to the scheduled expiration date that the Bid will be extended for a time period specified by the County.

30. In the evaluation of the Bids, any award will be subject to the Bid being:
 - A. Compliant to the specification – meets form, fit, and function requirements stated or implied in the specification.
 - B. Lowest cost to the County over projected useful life.
 - C. Administratively Compliant – Including all required bonds, insurance, established quality of work and general reputation, financial responsibility, relevant experience, and related criteria.
31. All bids and Bids submitted to Fulton County are subject to the Georgia “Open Records Act”, Official Code of Georgia, Annotated (O.C.G.A.) §50-18-70 et seq.
32. All bids and Bids submitted to Fulton County involving Utility Contracting are subject to the Georgia law governing licensing of Utility Contractors, O.C.G.A. §43-14-8.2(h). The Utility Contractor License number of the person who will perform the utility work shall be written on the face of the Bid envelope.
33. The apparent silence of this specification, and any supplement thereto, as to details, of the omission from it of a detailed description concerning any point, will be regarded as meaning only the best commercial practices are to prevail. Only materials of the highest quality, correct type, size, and design are to be used. All interpretations of this specification will be made upon the basis of this statement, with Fulton County interpretation to prevail.
34. It is the policy of Fulton County that the evaluation and award process for County contracts shall be free from both actual and perceived impropriety, and that contacts between potential vendors and County officials, elected officials and staff regarding pending awards of County contracts shall be prohibited.
 - A. No person, firm, or business entity, however situated or composed, obtaining a copy of or responding to this solicitation, shall initiate or continue any verbal or written communication regarding this solicitation with any County officer, elected official, employee, or designated County representative, between the date of the issuance of this solicitation and the date of the County Manager’s

recommendation to the Board of Commissioners for award of the subject contract, except as may otherwise be specifically authorized and permitted by the terms and conditions of this solicitation.

- B. All verbal and written communications initiated by such person, firm, or entity regarding this solicitation, if same are authorized and permitted by the terms and conditions of this solicitation, shall be directed to the Purchasing Agent.
 - C. Any violation of this prohibition of the initiation or continuation of verbal or written communications with County officers, elected officials, employees, or designated County representatives shall result in a written finding by the Purchasing Agent that the submitted Bid or proposal of the person, firm, or entity in violation is “non-responsive”, and same shall not be considered for award.
35. Any Bidder intending to respond to this solicitation as a Joint Venture must submit an executed Joint Venture Agreement with this Bid. This agreement must designate those persons or entities authorized to execute documents or otherwise bind the Joint Venture in all transactions with Fulton County, or are accompanied by a document, binding upon the Joint Venture and its constituent members, making such designation. Bids from Joint Ventures that do not include these documents will be rejected as being “non-responsive”.
36. Any Bidder intending to respond to this solicitation must complete all of the Procurement Affidavit Forms provided in this solicitation. Bids that do not include these completed documents will be rejected as being “non-responsive”.

2.1 **Definition of Purchasing Terms**

Addenda - the plural of addendum.

Addendum - a written or graphic change to the contract documents issued prior to bid opening which becomes a part of the specifications for the project.

Advertisement - public notice inviting bids shall be published for two (2) consecutive weeks. All projects shall be published on the Fulton County's website @ www.co.fulton.ga.us , under "Bid Opportunities".

Amendment – a change, addition, alteration, correction or revision to a bid or proposal or contract document.

Award - approval by the Board of Commissioners, to begin the contracting process with the lowest most responsive and responsible bidder.

Bid - the formal process allowing prospective vendors to compete for goods and services sought by the County.

Bid acceptance - the acceptance of bids delivered to the Purchasing Agent at the time, place, and under the conditions contained in the invitation for bids and as further stipulated in the specifications document.

Bid opening - the public opening of bids received and accepted and the reading aloud of the name of each bidder and the amount of bid in the presence of one (1) or more witnesses at the time and place designated in the invitation to bid. For RFP openings only the name of the proponents are read aloud.

Brand name or equal specification – means a specification limited to one or more items by manufacturer's names or catalogue numbers to describe the standard of quality, performance and other salient characteristics needed to meet County requirements and which provides for the submission of equivalent products from any manufacturer.

Brand name specifications – means a specification limited to one or more items by manufacturer's names or catalogue numbers.

Collusion – a secret agreement, whether expressed or implied, to commit a fraudulent, deceitful, unlawful, or wrongful act.

Collusive bidding – a violation of antitrust statutes that consists of a response to a solicitation by two or more persons who have secretly agreed to circumvent laws and rules regarding independent and competitive bidding.

County - "County" shall mean the Fulton , Georgia, a political subdivision of the State of Georgia, and shall include all agencies, establishments or officials of the government of the .

Contractor - any person or entity having a contract with the County.

Days - "Days" shall mean calendar days.

Debarment – the exclusion of a person or company from participating in a procurement activity for an extended period of time, as specified by law, because of previous illegal or irresponsible action.

Designee - an authorized representative of a person holding superior position of responsibility.

Invitation to bid (ITB) - all documents, whether attached or incorporated by reference, utilized for soliciting sealed bids.

Inspection - an authorized representative of the County, or of the County's architect/engineer, assigned to make all necessary inspections, test, and reports of the work performed or being performed.

May - denotes permissive.

Offer - a proposal by an offeror submitted when procurement is made by a source selection method other than competitive sealed bidding.

Offeror – a person making an offer.

Procurement - buying, purchasing, renting, leasing or otherwise acquiring any supplies, services or construction. Also includes all functions that pertain to the obtaining of any supply, service or construction, including a description of requirements, selection and solicitation of sources, preparation and award of contracts, and all phases of contract administration.

Purchasing Agent - the Director of the Fulton County Department of Purchasing the principal purchasing official for the County.

Responsible bidder or responsible offeror – means a person or entity that has the capability in all respects to perform fully and reliably the contract requirements.

Scope of work - means the work that is required by the contract documents.

Shall - denotes imperative.

Solicitation - an invitation for bid, a request for proposal, a request for quotation, or any other document issued by the County for the purpose of soliciting bids or bids to perform a County contract.

Specifications – means any description of the physical or functional characteristics or of the nature of a supply, service or construction item. It may include a description of any requirement for inspecting, testing or preparing a supply, service or construction item for delivery.

2.2 Clarification and Interpretations

Bidders may submit requests for clarifications or interpretations regarding this ITB. Bidders must prepare such requests in writing for the County's consideration as set forth in this section of this ITB. While the County has not placed an initial limitation on the number of requests which can be submitted, Bidders are cautioned that if Bidders do not request meaningful clarifications or interpretations in an organized manner (e.g., limited frequency of requests), the County will set restrictions on the frequency and number of requests permitted. The County will not respond to requests received after **Friday, October 14, 2005 at 5:00 PM**, local prevailing time. Bidders are advised that this section places no obligation on the part of the County to respond to any or all requests for clarification or interpretation, and that the County's failure to respond to any such request will not relieve the bidder of any obligations or conditions required by this ITB.

Request for clarification or interpretation regarding this ITB shall only be submitted in writing (letter, fax or email) to:

Al Micah Phillips, Chief, Assistant Purchasing Agent
Department of Purchasing
Fulton County Public Safety Building
130 Peachtree Street, S.W., 1168
Atlanta, GA 30303
Fax: (404) 893-1736
almicah.philliips@co.fulton.ga.us

All responses to written requests for clarification, interpretation, or additional information will be distributed as addenda to this ITB to all persons registered with the County to have received a copy of the ITB.

No oral interpretation, instruction, or information concerning this ITB given by any employee or agent of the County shall be binding on the County. Bidders who submit a bid in reliance on any such oral information risk having their response to this ITB deemed non-responsive by the County. Only written responses issued by addendum to this ITB should be considered by the bidders.

During the period provided for the preparation of bids, the County may issue addenda to this ITB. These addenda will be numbered consecutively and will be distributed to those who have been issued a copy of this ITB. Additionally, the addenda will be posted on the Fulton County website, www.co.fulton.ga.us. these addenda will be issued by, or on behalf of, the County and will constitute a part of this ITB. Each bidder is required to acknowledge by submitting an executed acknowledgment form included with this bid. This acknowledgment shall include all addenda distributed prior to the bid submission date. All responses to this ITB shall be prepared with full consideration of the addenda issued prior to the bid submission date.

2.3 Right to Reject Bids

The County reserves the right to reject any or all bids and to waive informalities. No bids will be received after the time set for opening bids. Any unauthorized conditions, limitations or provisions attached to the Bid, except as provided herein, will render it informal and may cause its rejection. Unbalanced bids will be subject to rejection. Any bidder may withdraw his/her bid, either personally or by telegraphic or written request, at any time prior to the scheduled closing time for receipt of bids. Telegraphic or written requests for withdrawal must be in the possession of the County prior to the closing time for receipt of bids.

2.4 Disqualification of Bidders

The submission of more than one (1) bid to the County as the primary Bidder or member of a joint venture for the same bid by an individual firm, partnership or corporation under the same or different names may be considered as sufficient for disqualification of a bidder and the rejection of the bid.

2.5 Applicable Laws

All applicable laws and regulations of the State of Georgia and ordinances and regulations of Fulton County shall apply. Protestors shall seek resolution of their complaints in the manner provided in the Fulton County Code of Laws §2-324, which is incorporated by reference herein.

2.6 Examination of Contract Documents

Prospective bidders shall examine the contract documents and before submitting a bid, shall make a written request to the County for an interpretation or correction of any ambiguity, in consistency or error therein which could be discovered by a bidder. At the bid opening each bidder shall be presumed to have read and be familiar with the contract documents.

2.7 Termination

The County may terminate the contract resulting from this solicitation at any time the vendor fails to carry out the contract provisions, if in the opinion of the County, the performance of the contract is unreasonably delayed, or the vendor is in direct violation of the contract conditions. The County shall provide the vendor with notice of any conditions which violate or endanger the performance of the contract and, if after such notice the contractor fails to remedy such conditions within thirty (30) days, to the satisfaction of the County, the County may exercise their option in writing to terminate the Contract without further notice to the Contractor and order the Contractor to stop work immediately and vacate the premises. Vendor agrees by its bid submission that the County's decision is final and valid.

2.8 Indemnification and Hold Harmless Agreement

Contractor/Vendor hereby agrees to release, indemnify, defend and hold harmless the County, it's Commissioners, officers, employees, subcontractors, successors, assigns and agents, from and against any and all losses (including death), claims, damages, liabilities, costs and expenses (including but not limited to all actions, proceedings, or investigations in respect thereof and any costs of judgments, settlements, court costs, attorney's fees or expenses, regardless of the outcome of any such action, proceeding, or investigation), caused by, relating to, based upon or arising out of any act or omission by contractor, it's directors, officers, employees, subcontractors, successors, assigns or agents, or otherwise in connection with it's acceptance, or the performance, or nonperformance, of it's obligations under this agreements.

2.9 Irrevocable Offer

No bid may be modified, withdrawn, or cancelled by the bidder for sixty (60) days following the date and time designated for receipt of bids, and each bidder so agrees in submitting its bid. All adjustment factors shall remain valid during this time period unless noted otherwise.

Prior to the date and time designated for receipt of bids, a bid may be withdrawn on written or facsimile (fax) request, provided that written confirmation of any fax withdrawal over the signature of the bidder must have been mailed and postmarked on or before the date and time set for receipt of bids. A withdrawn bid may be resubmitted up to the date and time designated for receipt of bids, provided that it is then fully in conformance with these Instructions to Bidders.

SECTION 3

PURCHASING FORMS & INSTRUCTIONS

3.1 Introduction

To be deemed responsive to this ITB, Bidders must provide the information requested and complete in detail all Bid Forms. The appropriate individual(s) authorized to commit the Bidder must sign the Bid Forms. Bidders should reproduce each Bid Form, as required, and complete the appropriate portions of the forms provided in this section.

Procurement Affidavits

Procurement Affidavit Form 1	Certification Regarding Debarment
Procurement Affidavit Form 2	Form A: Non-Collusion Affidavit (Prime) Form B: Sub-Contractor Non-Collusion Affidavit
Procurement Affidavit Form 3	Certificate of Acceptance of Invitation to Bid Requirements

3.2 Procurement Affidavit Forms Description

The following paragraphs present an overview of each Procurement Affidavit Form required.

3.2.1 Certification Regarding Debarment

Bidder shall complete and submit Form 1, which certifies that neither it nor its subcontractors are presently debarred, suspended, proposed for debarment, declared ineligible, or otherwise excluded from doing business with any government agency.

3.2.2 Non-Collusion Affidavit

The Bidder shall include a copy of Proposal Form 2A, executed by an authorized officer of the corporation. Bids developed by a joint venture shall be similarly executed by all joint venture participants. Additionally, all sub-contractors shall execute a copy of Bid Form 2B which shall also be submitted with the bid.

3.2.3 Certificate of Acceptance of Invitation to Bid Requirements

Bidder shall complete and submit Form 3, which certifies that Bidder has read the solicitation including all addenda, exhibits, attachments and appendices.

CERTIFICATION REGARDING DEBARMENT

- (1) The Offeror certifies that neither it or its subcontractors is presently debarred, suspended, proposed for debarment, declared ineligible, or otherwise excluded from doing business with any government agency. Any such exclusion may cause prohibition of your firm from participating in any procurement by the Fulton County Government.
- (2) If the Offeror is unable to certify to any of the statements in this certification, such Offeror or subcontractor shall attach an explanation to this bid or proposal.

INSTRUCTIONS FOR CERTIFICATION

By signing and submitting this certification, the Offeror is providing the certification set out below:

- (1) The certification in this clause is a material representation of fact upon which reliance will be placed. If it is later determined that the prospective vendor knowingly rendered a false certification, the Purchasing Agent may pursue all available remedies, including suspension and/or debarment, for withdrawal of award or termination of a contract.
- (2) The prospective Offeror shall provide immediate written notice to the Purchasing Agent if at anytime the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (3) Offeror shall be under a continuing duty to immediately inform the Purchasing Agent in writing of any changes, if as a result of such changes, the Offeror certification regarding debarment is affected.

DEBARMENT ORDINANCE

The following SECTION 2-322 of Fulton County Code of Laws establishes the procedure for the debarment of contractors.

- (a) *Authority to suspend.*

After reasonable notice to the entity involved and reasonable opportunity for that entity to be heard, the Purchasing Agent, after consultation with user department, the County Manager and the County Attorney shall have the authority to suspend an entity for cause from consideration for award of county contracts. As used in this SECTION, the term entity means any business entity, individual, firm, contractor, subcontractor or business corporation, partnership, limited liability corporation, firm, contractor,

subcontractor or business structured; provided, further, that any such entity shall also be subject to suspension under this SECTION if any of its constituents, members, subcontractors at any tier of such entity's and the entity, or any constituent or member, knew or should have known of the commission of the act. The suspension shall be for a period not to exceed three (3) years unless cause is based on a felony conviction for an offense related or associated with fraudulent contracting or misappropriation of funds wherein the suspension shall not exceed seven (7) years.

(b) *Causes for Suspension.* The causes for suspension include:

- (1) Conviction for commission of a criminal offense as an incident to obtain or attempting to obtain a public or private contract or subcontract, or in performance of such contract or subcontract;
- (2) Conviction of state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property or other offense indicating a lack of business integrity or business honesty which currently, seriously and directly affects responsibility as a county contractor.
- (3) Conviction of state or federal anti-trust statutes arising out of the solicitation and submission of bids and bids;
- (4) Violation of contract provisions, as set forth below, of a character which is regarded by the Purchasing Agent to be so serious as to justify suspension action:
 - a. Failure to perform in accordance with the specifications within a time limit provided in a county contract;
 - b. A recent record of failure to perform or unsatisfactory performance in accordance with the terms of one or more contracts; provided, that failure to perform or unsatisfactory performance caused by acts beyond the control of the contractor shall not be considered to be a basis for suspension;
 - c. Material representation of the composition of the ownership or workforce or business entity certified to the county as a minority business enterprise; or
 - d. Falsification of any documents.
- (5) For violation of the ethical standards set forth in Fulton County Code Chapter 9, Code of Ethics.
- (6) Knowing misrepresentation to the county, of the use which a majority

owned contractor intends to make a minority business enterprise (a business entity at least 51 percent of which is owned and controlled by minority persons, as defined in Fulton County Code Chapter 6, Article B, Minority Business Enterprise Affirmative Action Program and certified as such by the county), as a sub-contractor or a joint venture partner, in performing work under contract with the county.

Failure to fully and truthfully provide the information required, may result in the disqualification of your bid/proposal from consideration or termination of the Contract, once awarded. This document must be completed and included as a part of the bid/proposal package along with other required documents.

Under penalty of perjury, I declare that I have examined this certification and all attachments hereto, if applicable, to the best of my knowledge and belief, and all statements contained hereto are true, correct, and complete.

On this _____ day of _____, 2005

(Legal Name of Offeror) (Date)

(Signature of Authorized Representative) (Date)

(Title)

STATE OF GEORGIA

COUNTY OF FULTON

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER/OFFEROR

I, _____ certify that pursuant to Fulton County Code SECTION 2-320 (11), this bid or proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same work, labor or service to be done or the supplies, materials or equipment to be furnished and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all conditions of this bid or proposal and certify that I am authorized to sign this bid or proposal for the bidder.

Affiant further states that pursuant to O.C.G.A. SECTION 36-91-21 (d) and (e), _____ has not, by itself or with others, directly or indirectly, prevented or attempted to prevent competition in such bidding or bids by any means whatsoever. Affiant further states that (s)he has not prevented or endeavored to prevent anyone from making a bid or offer on the project by any means whatever, nor has Affiant caused or induced another to withdraw a bid or offer for the work.

Affiant further states that the said offer of _____ is bona fide, and that no one has gone to any supplier and attempted to get such person or company to furnish the materials to the bidder only, or if furnished to any other bidder, that the material shall be at a higher price.

(COMPANY NAME)

(PRESIDENT/VICE PRESIDENT)

Sworn to and subscribed before me this _____ day of _____, 200__.

(SECRETARY/ASSISTANT SECRETARY)

(Affix corporate seal here, if a corporation)

Notary Public: _____

County: _____

Commission Expires: _____

NOTE:

IF THE OFFEROR IS A PARTNERSHIP, ALL OF THE PARTNERS AND ANY OFFICER, AGENT, OR OTHER PERSON WHO MAY HAVE REPRESENTED OR ACTED FOR THEM IN BIDDING FOR OR PROCURING THE CONTRACT SHALL ALSO MAKE THIS OATH.

IF THE OFFEROR IS A CORPORATION, ALL OFFICERS, AGENTS, OR OTHER PERSONS WHO MAY HAVE ACTED FOR OR REPRESENTED THE CORPORATION IN BIDDING FOR OR PROCURING THE CONTRACT SHALL MAKE THE OATH.

STATE OF GEORGIA

COUNTY OF FULTON

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

I, _____ certify that pursuant to Fulton County Code SECTION 2-320 (11), this bid or proposal is made without prior understanding, agreement or connection with any corporation, firm or person submitting a bid for the same work, labor or service to be done or the supplies, materials or equipment to be furnished and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences and civil damages awards. I agree to abide by all conditions of this bid or proposal and certify that I am authorized to sign this bid or proposal for the bidder.

Affiant further states that pursuant to O.C.G.A. SECTION 36-91-21 (d) and (e), _____ has not, by itself or with others, directly or indirectly, prevented or attempted to prevent competition in such bidding or bids by any means whatsoever. Affiant further states that (s)he has not prevented or endeavored to prevent anyone from making a bid or offer on the project by any means whatever, nor has Affiant caused or induced another to withdraw a bid or offer for the work.

Affiant further states that the said offer of _____ is bona fide, and that no one has gone to any supplier and attempted to get such person or company to furnish the materials to the bidder only, or if furnished to any other bidder, that the material shall be at a higher price.

(COMPANY NAME)

(PRESIDENT/VICE PRESIDENT)

Sworn to and subscribed before me this _____ day of _____, 200__.

(SECRETARY/ASSISTANT SECRETARY)

(Affix corporate seal here, if a corporation)

Notary Public: _____

County: _____

Commission Expires: _____

NOTE:

IF THE OFFEROR IS A PARTNERSHIP, ALL OF THE PARTNERS AND ANY OFFICER, AGENT, OR OTHER PERSON WHO MAY HAVE REPRESENTED OR ACTED FOR THEM IN BIDDING FOR OR PROCURING THE CONTRACT SHALL ALSO MAKE THIS OATH.

IF THE OFFEROR IS A CORPORATION, ALL OFFICERS, AGENTS, OR OTHER PERSONS WHO MAY HAVE ACTED FOR OR REPRESENTED THE CORPORATION IN BIDDING FOR OR PROCURING THE CONTRACT SHALL MAKE THE OATH.

CERTIFICATE OF ACCEPTANCE OF INVITATION TO BID
REQUIREMENTS

This is to certify that on this day, offeror acknowledges that he/she has read this solicitation document, pages #_____ to #_____ inclusive, including any addenda # _____ to #_____ exhibit(s) #_____ to #_____, attachment(s) # _____ to #_____, and/or appendices #_____ to #,_____in its entirety, and agrees that no pages or parts of the document have been omitted, that he/she understands, accepts and agrees to fully comply with the requirements therein, and that the undersigned is authorized by the offeror to submit the proposal herein and to legally obligate the offeror thereto.

Company:_____

Signature:_____

Name: _____

Title:_____ Date: _____

Phone: _____

(Affix Corporate Seal)

SECTION 4

CONTRACT COMPLIANCE REQUIREMENTS

4.1 NON-DISCRIMINATION IN CONTRACTING AND PROCUREMENTS

It is the policy of Fulton County Government that discrimination against businesses by reason of the race, color, gender or national origin of the ownership of any such business is prohibited. Furthermore, it is the policy of the Board of Commissioners ("Board") that Fulton County and all vendors and contractors doing business with Fulton County shall provide to all businesses the opportunity to participate in contracting and procurement paid, in whole or in part, with monetary appropriations of the Board. Similarly, it is the policy of the Board that the contracting and procurement practices of Fulton County should not implicate Fulton County as either an active or passive participant in the discriminatory practices engaged in by private contractors or vendors seeking to obtain contracts with Fulton County.

Equal Business Opportunity Plan (EBO Plan): In addition to the proposal submission requirements, each vendor **must** submit an Equal Business Opportunity Plan (EBO Plan) with their bid/proposal. The EBO Plan is designed to enhance the utilization of a particular racial, gender or ethnic group by a bidder/proposer, contractor, or vendor or by Fulton County. The respondent **must** outline a plan of action to encourage and achieve diversity and equality in the available procurement and contracting opportunities with *this solicitation*.

The EBO Plan **must** identify and include:

1. Potential opportunities within the scope of work of *this solicitation* that will allow for participation of racial, gender or ethnic groups.
2. Efforts that will be made by the bidder/proposer to encourage and solicit minority and female business utilization in *this solicitation*.

Fulton County encourages joint ventures, teaming, partnering and mentor-protégé relationships with minority and female businesses in an effort to achieve contracting and procurement diversity.

Prompt Payment: The prime contractor **must** certify in writing and **must** document on the Exhibit G Form (Prime Contractor/Subcontractor Utilization Report) that all subcontractors, sub-consultants and suppliers have been promptly paid for work and materials, (less any retainage by the prime contractor prior to receipt of any further progress payments). In the event the prime contractor is unable to pay subcontractors, sub-consultants or suppliers until it has received a progress payment from Fulton County, the prime contractor shall pay all subcontractors, sub-consultants or suppliers funds due from said progress payment within forty-eight (48) hours of receipt of payment from Fulton County. In no event shall a subcontractor, sub-consultant or supplier be paid later than fifteen (15) days as provided for by state law.

4.2 REQUIRED FORMS AND EBO PLAN

In order to be compliant with the intent and provisions of the Fulton County Non-Discrimination in Purchasing and Contracting Ordinance (99-0960), bidders/proposers **must** submit the following completed documents. Failure to provide this information **shall** result in the proposal being deemed non-responsive.

- **Exhibit A** – Promise of Non-Discrimination
- **Exhibit B** – Employment Report
- **Exhibit C** – Schedule of Intended Subcontractor Utilization
- **Exhibit D**– Letter of Intent to Perform as a Subcontractor or Provide Materials or Services
- **Exhibit E** – Declaration Regarding Subcontractors Practices
- **Exhibit F** – Joint Venture Disclosure Affidavit
- **Equal Business Opportunity Plan (EBO Plan)** – This document is not a form. It is a statement created by the bidder/proposer on its company letter head addressing the EBO Plan requirements.

All Contract Compliance documents (Exhibits A – F and EBO Plan) are to be placed in a **separate sealed envelope** clearly marked “Contract Compliance”. The EBO Plan must be submitted on company letterhead. These documents are considered part of and should be submitted with the Technical Proposal.

The following document must be completed as instructed if awarded the project:

- **Exhibit G** – Prime Contractor’s Subcontractor Utilization Report

EXHIBIT A – PROMISE OF NON-DISCRIMINATION

“Know all persons by these presents, that I/We (_____),
Name

Title Firm Name
Hereinafter “Company”, in consideration of the privilege to bid on or obtain contracts funded, in whole or in part, by Fulton County, hereby consent, covenant and agree as follows:

- 1) No person shall be excluded from participation in, denied the benefit of, or otherwise discriminated against on the basis of race, color, national origin or gender in connection with any bid submitted to Fulton County for the performance of any resulting there from,
- 2) That it is and shall be the policy of this Company to provide equal opportunity to all businesses seeking to contract or otherwise interested in contracting with this Company without regard to the race, color, gender or national origin of the ownership of this business,
- 3) That the promises of non-discrimination as made and set forth herein shall be continuing in nature and shall remain in full force and effect without interruption,
- 4) That the promise of non-discrimination as made and set forth herein shall be made a part of, and incorporated by reference into, any contract or portion thereof which this Company may hereafter obtain,
- 5) That the failure of this Company to satisfactorily discharge any of the promises of non-discrimination as made and set forth herein shall constitute a material breach of contract entitling the Board to declare the contract in default and to exercise any and all applicable rights and remedies, including but not limited to cancellation of the contract, termination of the contract, suspension and debarment from future contracting opportunities, and withholding and/or forfeiture of compensation due and owing on a contract; and
- 6) That the bidder shall provide such information as may be required by the Director of Contract Compliance pursuant to SECTION 4.4 of the Fulton County Non-Discrimination in Purchasing and Contracting Ordinance.

SIGNATURE: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

EXHIBIT B – EMPLOYMENT REPORT

The demographic employment make-up for the bidder/proposer **must** be identified and submitted with this bid/proposal. In addition, if subcontractors will be utilized by the bidder/proposer to complete this project, then the demographic employment make-up of the subcontractor(s) must be identified and submitted with this bid.

EMPLOYEES

CATEGORY	NATIVE AMERICAN		AFRICAN AMERICAN		ASIAN AMERICAN		HISPANIC AMERICAN		CAUCASIAN AMERICAN		OTHER	
	M	F	M	F	M	F	M	F	M	F	M	F
Male/Female												
Mgmt/Official												
Professional												
Supervisors												
Office/ Clerical												
Craftsmen												
Laborers												
Other (specify)												
TOTALS												

FIRM'S NAME: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

This completed form is for (Check one) ☐ Bidder/Proposer ☐ Subcontractor

Submitted by: _____ Date Completed: _____

EXHIBIT C - SCHEDULE OF INTENDED SUBCONTRACTOR UTILIZATION

If the bidder/proposer intends to subcontract any portion of this scope of work/service(s), this form **must be** completed and **submitted with the bid/proposal**. All prime bidders/proposers **must** include Letter(s) of Intent (Exhibit D) in the bid document for all subcontractors who will be utilized under the scope of work/services.

Prime Bidder/Proposer: _____

ITB/RFP Number: _____

Project Name or Description of Work/Service(s): _____

1. My firm, as Prime Bidder/Proposer on this scope of work/service(s) is _____ is not a minority or female owned and controlled business enterprise. (Please indicate below the portion of work, including, percentage of bid/proposal amount that your firm will carry out directly):

2. If the Prime Bidder/Proposer is a Joint Venture, please complete Exhibit F: Joint Venture Disclosure Affidavit and attach a copy of the executed Joint Venture Agreement.
3. Sub-Contractors (including suppliers) to be utilized in the performance of this scope of work/service(s), if awarded, are:

SUBCONTRACTOR NAME: _____

ADDRESS: _____

PHONE: _____

CONTACT PERSON: _____

ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____

WORK TO BE PERFORMED: _____

DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

***Ethnic Groups: African American (AABE); Asian American (ABE); Hispanic American (HBE); Native American (NABE); White Female American (WFBE); **If yes, please attach copy of recent certification.**

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____

DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____

DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____

DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

SUBCONTRACTOR NAME: _____
ADDRESS: _____

PHONE: _____
CONTACT PERSON: _____
ETHNIC GROUP*: _____ COUNTY CERTIFIED** _____
WORK TO BE PERFORMED: _____

DOLLAR VALUE OF WORK: \$ _____ PERCENTAGE VALUE: _____ %

Total Dollar Value of Subcontractor Agreements: (\$)_____

Total Percentage Value: (%)_____

CERTIFICATION: The undersigned certifies that he/she has read, understands and agrees to be bound by the Bid/Proposer provisions, including the accompanying Exhibits and other terms and conditions regarding sub-contractor utilization. The undersigned further certifies that he/she is legally authorized by the Bidder/Proposer to make the statement and representation in this Exhibit and that said statements and representations are true and correct to the best of his/her knowledge and belief. The undersigned understands and agrees that if any of the statements and representations are made by the Bidder/Proposer knowing them to be false, or if there is a failure of the intentions, objectives and commitments set forth herein without prior approval of the County, then in any such event the Contractor's acts or failure to act, as the case may be, shall constitute a material breach of the contract, entitling the County to terminate the Contract for default. The right to so terminate shall be in addition to, and in lieu of, any other rights and remedies the County may have for other defaults under the contract.

Signature:_____ **Title:**_____

Firm or Corporate Name:_____

Address:_____

Telephone: ()_____

Fax Number: ()_____

Email Address:_____

EXHIBIT D

**LETTER OF INTENT TO PERFORM AS A SUBCONTRACTOR
OR
PROVIDE MATERIALS OR SERVICES**

This form **must** be completed by **ALL** known subcontractor and submitted with the bid/proposal. The Prime Contractor **must** submit Letters of Intent for **ALL** known subcontractors at time of bid submission.

To: _____
(Name of Prime Contractor Firm)

From: _____
(Name of Subcontractor Firm)

ITB/RFP Number: _____

Project Name: _____

The undersigned is prepared to perform the following described work or provide materials or services in connection with the above project (specify in detail particular work items, materials, or services to be performed or provided):

Description of Work	Project Commence Date	Project Completion Date	Estimated Dollar Amount

(Prime Bidder)

(Subcontractor)

Signature_____

Signature_____

Title_____

Title_____

Date_____

Date_____

EXHIBIT E - DECLARATION REGARDING SUBCONTRACTING PRACTICES

If the bidder/proposer **does not intend to subcontract** any portion of the scope of work services(s), this form **must be** completed and submitted with the bid/proposal.

_____ hereby declares that it is my/our intent to
(Bidder)

perform 100% of the work required for _____
(ITB/RFP Number)

(Description of Work)

In making this declaration, the bidder/proposer states the following:

1. That the bidder/proposer does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform **all elements** of the work on this project with his/her own current work forces;
2. If it should become necessary to subcontract some portion of the work at a later date, the bidder/proposer will comply with all requirements of the County's Non-Discrimination Ordinance in providing equal opportunities to all firms to subcontract the work. The determination to subcontract some portion of the work at a later date shall be made in good faith and the County reserves the right to require additional information to substantiate a decision made by the bidder/proposer to subcontract work following the award of the contract. Nothing contained in this provision shall be employed to circumvent the spirit and intent of the County's Non-Discrimination Ordinances;
3. The bidder will provide, upon request, information sufficient for the County to verify Item Number one.

AUTHORIZED COMPANY REPRESENTATIVE

Name: _____ Title: _____ Date: _____

Signature: _____

Firm: _____

Address: _____

Phone Number: _____

Fax Number: _____

Email Address: _____

EXHIBIT F - JOINT VENTURE DISCLOSURE AFFIDAVIT

ITB/RFP No. _____

Project Name _____

This form must be completed and submitted with the bid/proposal if a joint venture approach is to be undertaken.

In order to evaluate the extent of small, minority and female business involvement being proposed by a Bidder/Proposer, certain relevant information must be provided prior to contract award. The information requested below is to clearly identify and explain the extent of small business participation in the proposed joint venture. All items must be properly addressed before the business entity can be evaluated.

1. Firms:

1) Name of Business: _____

Street Address: _____

Telephone No.: _____

Nature of Business: _____

2) Name of Business: _____

Street Address: _____

Telephone No.: _____

Nature of Business: _____

3) Name of Business: _____

Street Address: _____

Telephone No.: _____

Nature of Business: _____

NAME OF JOINT VENTURE (If applicable): _____

ADDRESS: _____

PRINCIPAL OFFICE: _____

OFFICE PHONE: _____

Note: Attach additional sheets as required

1. Describe the capital contributions by each joint venturer and accounting thereof.
2. Describe the financial controls of the joint venture, e.g., will a separate cost center be established? Which venturer will be responsible for keeping the books? How will the expense therefore be reimbursed? What is the authority of each joint venture to commit or obligate the order?
3. Describe any ownership, options for ownership, or loans between the joint ventures. Identify terms thereof.
4. Describe the estimated contract cash flow for each joint venturer.
5. To what extent and by whom will the on-site work be supervised?
6. To what extent and by whom will the administrative office be supervised?
7. Which joint venturer will be responsible for material purchases including the estimated cost thereof? How will the purchase be financed?
8. Which joint venturer will provide equipment? What is the estimated cost thereof? How will the equipment be financed?
9. Describe the experience and business qualifications of each joint venturer.
10. Submit a copy of all joint venture agreements and evidence of authority to do business in the State of Georgia as well as locally, to include all necessary business licenses.
11. Percent of Minority/Female Business Enterprises ownership by each joint venture in terms of profit and loss sharing: _____

12. The authority of each joint venturer to commit or obligate the other: _____

13. Number of personnel to be involved in project, their crafts and positions and whether they are employees of the Minority/Female Business Enterprises enterprise, the majority firm or the joint venture: _____

14. Identification of control and participation in venture; list those individuals who are responsible for day-to-day management and policy decision-maker, including, but not limited to, those with prime responsibility for areas designated below; (use additional sheets if necessary)

<u>Name</u> <u>Operation</u>	<u>Race</u>	<u>Sex</u>	<u>Financial</u> <u>Decisions</u>	<u>Supervision</u> <u>Field</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

In connection with any work that these firms, as a joint venture, might be authorized to perform in connection with above captioned contract, we each do hereby authorize representatives of the Fulton County Department of Contract Compliance, Departments of Purchasing and Finance, under the direction of the County Manger's Office, to examine, from time to time, the books, records and files to the extent that such relate to this County project.

WE DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT WE ARE AUTHORIZED, ON BEHALF OF THE ABOVE FIRMS, TO MAKE THIS AFFIDAVIT AND GRANT THE ABOVE PRIVILEGE.

FOR _____
(Company)

Date: _____
(Signature of Affiant)

(Printed Name)

(Company)

Date: _____
(Signature of Affiant)

(Printed Name)

State of _____:

County of _____:

On this ____ day of _____, 20_____, before me, appeared

_____, the undersigned known to me to be the person described in the foregoing Affidavit and acknowledge that he (she) executed the same in the capacity therein stated and for the purpose therein contained.

EXHIBIT – G PRIME CONTRACTOR/SUB-CONTRACTOR UTILIZATION REPORT

This report **must** be submitted by the **tenth day** of each month, along with a copy of your monthly invoice (schedule of values/payment application) to Contract Compliance. Failure to comply **shall** result in the County commencing proceedings to impose sanctions to the prime contractor, in addition to pursuing any other available legal remedy. Sanctions may include the suspending of any payment or part thereof, termination or cancellation of the contract, and the denial of participation in any future contracts awarded by Fulton County.

REPORTING PERIOD		PROJECT NAME:				
FROM:		PROJECT NUMBER:				
TO:		PROJECT LOCATION:				
PRIME CONTRACTOR		Contract Award Date	Contract Award Amount	Change Order Amount	Contract Period	% Complete to Date
Name:						
Address:						
Telephone #:						

AMOUNT OF REQUISITION THIS PERIOD: \$ _____

TOTAL AMOUNT REQUISITION TO DATE: \$ _____

SUBCONTRACTOR UTILIZATION (add additional rows as necessary)

Name of Sub-Contractor	Description of Work	Contract Amount	Amount Paid To Date	Amount Requisition This Period	Contract Period	
					Starting Date	Ending Date
TOTALS						

Executed By: _____

(Signature)

(Printed Name)

Notary: _____

Date: _____

My Commission Expires: _____

SECTION 5

FIRE APPARATUS PUMPER (SIDE MOUNT PUMP PANEL)

(SPECIFICATIONS)

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 - 7.1.1 Tail Lights Whelen Led
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 - 7.1.6 Compartment Lighting
 - 7.1.7 Rear Step Lights
 - 7.1.8 Pump Compartment Work Light
 - 7.1.9 Under Body Lighting
 - 7.1.10 Under Body Lighting Rear Step
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- 7.2 Emergency Lighting
 - 7.2.1 Light Bar
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- 8.2 Fulton County Logo
- 8.3 Scotchlite Retro-Reflective Stripe
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- 9.2 Appliances
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- 9.4 Rope
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- 9.10 Extrication Tools, Hurst – No Exceptions!!!
- 9.11 Hose
- 9.12 Replacement/Extra Parts
- 9.13 Communication Device
- 9.14 Miscellaneous Equipment
- 9.15 Ground Ladders

The specifications provided have been established to conform to the current fleet body layout, pump components, tools and equipment in an attempt to standardize the fleet. The apparatus shall conform to all appropriate requirements of the National Fire Prevention Association Standards No. 1901, Current Edition, unless otherwise noted herein.

1.2 Pre-build and Inspection Trips:

The successful bidder will provide three (3) mandatory factory inspection trips for up to four (4) Fire Department representatives, to the apparatus manufacturer's facility. In the event that the manufacturers factory is located in excess of one hundred fifty (150) miles from Atlanta, air fare, lodging, and general travel expenses will be the sole responsibility of the manufacturer. The factory visits will occur at the following stages of production of the apparatus.

1. Pre-Construction/Blueprint Review conference will be held at the vendor's factory site subsequent to award, but **PRIOR TO ANY PRODUCTION** of the requested vehicles. This conference will be held for a minimum of one full business day (Eight (8) hours). Final design will be confirmed at this conference. Review of specifications at the Pre-Construction Conference shall be in order of this completed specification. Four (4) Fulton County personnel will attend the Pre-Build Conference.
2. Fire Body Pre-Paint inspections will be held at the manufacturer's factory. Four (4) Fulton County personnel will attend the Pre-Paint Inspection.
3. Final Inspection Trip will be performed at the factory where the vehicle(s) is assembled. The Inspection Trip will be conducted when the vehicle(s) is substantially completed, just prior to leaving the factory. The purpose of this trip is to insure compliance with the specifications. Four (4) Fulton County personnel will attend the inspection.

The purchaser maintains the right to inspect the apparatus, within manufacturer's normal business hours, at any other point during construction. Expenses incurred during nonspecific inspection visits will be the responsibility of the purchaser.

During inspection visits, the purchaser reserves the right to perform actual performance tests to evaluate completed portions of the unit. Testing will be accomplished with the assistance and resources of the contractor.

1.3 Delivery:

The vehicle(s) must be delivered under their own power to the Fulton County Fire Department Maintenance Shop, located at 5890 Plummer Road, Atlanta, Georgia 30336. Delivery of this apparatus is 180 days after award of bid.

1.4 Acceptance:

The vehicle(s) will be formally accepted when the vehicle(s) have been inspected by Fulton County and found to comply with the specifications and Purchase Order.

1.5 Liquidated Damages:

The County has the right to seek from the contractor liquidated damages for non-compliance and or non-performance in the execution of the contract. The Contractor shall pay liquidated damages in the sum of five hundred dollars (\$500.00) for each consecutive calendar day beyond the delivery date stated in the contract. The amount shall fund optional equipment as selected by the Department.

1.6 Bond Requirements:

Bonds must be written by a licensed Georgia agent in a company licensed to write surety bonds in the State of Georgia, and acceptable to Fulton County. Bonds are to be made out to Fulton County. Attorneys-in-fact who sign bids and/or contract bonds must file a certificate and effectively dated copy of their power-of-attorney with each bond.

Bonds shall be written by a surety listed in the Department of Treasury circular 570; authorized to do business in the State of Georgia; and shall have an underwriting limitation in excess of 100% of the bid amount. The bonds and Surety shall be subject to approval by the Attorney of the County.

Each bidder must submit with the Bid a bid Bond in an amount equal to 10% of the total bid amount. The Bid Bond will serve as a guarantee that if a respondent's bid is accepted and the successful bidder fails to execute the required contract and bonds within ten (10) days of notice of award, then the bid bond will be forfeited and retained by Fulton County in lieu of other legal remedies.

The successful bidder will be required to provide a Performance Bond in an amount equal to One Hundred Percent (100%) of the quoted cost, within seven (7) days after Notice of Award and prior to the start of any work.

NO EXCEPTIONS

1.7 Insurance Requirements:

Insurance must be written by a licensed Georgia agent in a company licensed to write insurance in the State of Georgia, and acceptable to Fulton County.

Policies and/or certificates certifying policies are to contain an agreement that the policies will not be changed and/or cancelled without a ten (10) day prior notice to Fulton County, as evidenced by return receipts of registered or certified letters.

Each bidder shall submit with the Bid proof of ability to provide the insurance coverage indicated below, if awarded the contract. The successful bidder shall furnish certificate of insurance to the County within seven (7) days of Notice of Award and prior to the start of any work. Insurance in the following amounts will be required for this project.

1. Product Liability Insurance in an amount of not less than twenty five million dollars (\$25,000,000.00) per occurrence for both bodily injury and/or property damage.
2. In the event that a major portion(s) of the apparatus (ie, chassis and/or body) is not designed, fabricated, and assembled by the prime builder, a separate Certificate of Liability Insurance, for each in an amount of not less than Fifteen million dollars (\$15,000,000.00) must be provided by each sub-contractor.

1.8 Information to Be Submitted:

Bids shall clearly indicate the legal name, address and telephone number of the bidder. Bids shall be signed above the typed or printed name of the signer. The signer shall have the authority to bind the bidder to the submitted bid. Bidders shall submit the original and four (4) copies of the bid document.

1. References- Provide a list of references, contacts and telephone numbers of other Fire Departments that have procured similar equipment as specified in this document.
2. Exact Body Layout- Bidders shall provide with bid, an exact body layout of the proposed vehicle.

1.9 Storage of Apparatus on Fulton County Property:

Storage of the vehicle(s) on Fulton County property is permissible, but does not constitute acceptance. The vehicle(s) remain the responsibility of the vendor until acceptance by the County.

1.10 Training Program:

The successful bidder shall provide an on-site training program for training of fire department personnel. This program shall be designed to assure complete understanding of all aspects of the apparatus in the operating environment. After delivery of the unit(s), the successful bidder shall supply a factory trained, qualified, field service technician for a minimum of three (3) days.

The training program shall be designed to instruct fire department personnel on the operation, preventive maintenance and care of the apparatus. The training program shall be oriented to the hands on approach, addressing introductory service skills utilizing the vehicle and include, but not be limited to the following:

1. Explain the operation of the entire apparatus. Each participant shall actually use the apparatus and be taught the necessary steps for safe operation.
2. Troubleshooting will be emphasized and reinforced continually throughout the training period.
3. Preventive Maintenance procedures.

1.11 No Divided Responsibilities

The apparatus manufacturer shall honor and be responsible for all warranties for a minimum of one year after delivery to ensure compatibility, serviceability and to eliminate divided responsibilities.

NO EXCEPTIONS

1.12 Compliance

The apparatus must conform to the motor vehicle laws of the State of Georgia, NFPA and all Federal safety laws in effect at the date of shipment.

1.13 NFPA vs. Fulton County

In those areas where Fulton County specifications conflict with the requirements of NFPA 1901, latest edition, NFPA 1901 requirements shall prevail. Fulton County Fire Department Logistics Division shall be notified of the conflict for resolution.

1.14 Operation/Service

The following applicable documentation shall be supplied upon delivery:

- Three (3) copies of Operation/Service manual of the apparatus operations and service manuals supplied by components manufacturers. Two (2) hard copies and One (1) copy on "CD/s"

- Pump certification including manufactures record of apparatus construction details.
- Certificate of compliance to Electrical Warning System Low Voltage test.
- Water tank capacity certificate.
- Line Voltage Electrical System test certificate.
- (NFPA 19-14.4.1 - 19.14.4.2)
- Certificate of approval for stationary pumping.

NO EXCEPTIONS

1.15 Excepted Format

Manufacturer's specifications will be accepted **in addition** to this completed format. The format of manufactures specification shall be the same general format of this completed specification. Review of specifications at the Pre-Construction Conference shall be in order of purchasers completed spec.

NO EXCEPTIONS

Section 2.0 Construction Specifications

2.1 General Design

The apparatus will be a Medium Cab four (4) door, Fire Pumper with a Mid frame Side Mount Pump and Pump Panel. Apparatus will be equipped with a water tank and hose bed. Body compartments shall be constructed of heavy duty materials, to withstand extreme service applications and carry fire fighting tools and equipment.

2.2 Overall Height

The maximum clearance height of the apparatus, including any accessories shall not exceed 10 feet. Underbody ground clearance shall be maximized by mounting brackets and components as high as practical

2.3 Alternate Fasteners

Self tapping / self threading fasteners or pop rivets shall not be used in applications where a bolt / machine screw, nut and 12 point star lock washer can be used.

2.4 Cab and Body Warranty

Manufacturer shall warrant cab and body for Ten (10) years against corrosion and structural failure.

Section 3.0 Cab

3.1 Cab General

The cab and chassis shall be a medium four door, aluminum tilt cab, built specifically for the fire service, specializing in chassis design for all fire service applications. The cab and chassis shall meet the requirements of the National Fire Protection Association Standard 1901, (1999 edition or latest edition). The cab interior will be the "Open-Space" design with no wall or window between the front and rear crew area to allow direct communication, better visibility and air circulation in the cab.

For Cab/chassis design comparison refer to the following manufacture designs:

Spartan Motors Flat Floor Gladiator Classic, model
GA40M, Or KME Renegade contour MFD Chassis

3.2 Cab Dimensions

The cab dimensions will be consistent with the Cab design of that layed out in 3.1.

3.3 Cab Tilt

The cab tilt actuation shall be an electric over hydraulic lift pump with a control box on a pendent for safe visual operation. The lift system shall have an ignition interlock and red lock down indicator lamp which shall illuminate when holding "down" switch to indicate safe road operation. Two cab tilt cylinders shall be provided with velocity fuses in each cylinder port. Hydraulic tilt operation shall be capable of tilting the cab a minimum of 45 degrees for service. The cab pivot points shall be engineered to withstand the full weight of the cab.

3.4 Cab Tilt Mechanism

Hydraulic cylinders will be detachable to allow removal of the engine for major service. A mechanical cylinder stay bar and release will be provided to insure a positive lock in the tilted position. Additionally, the cab tilt device shall be both electrically and hydraulically interlocked to prevent inadvertent activation of the cab tilt system.

3.5 Cab Tilt Operation and Safety

1. A "**CAB NOT LATCHED**" indicator light will be provided in the cab dash-warning cluster.
2. A dual switch control will be provided for the cab tilt system.
3. An auxiliary manual cab lift back up system will be furnished in the event of total electrical shutdown.

3.6 Cab Glass

All cab glass used in the cab shall be automotive tint. Full roll down windows shall be provided in each door, with worm gear drive cab operation. Left and right windshields shall use the same interchangeable glass. Padded sun visors shall be provided for the driver and officer.

3.7 Cab Glass Dimensions

All cab glass shall be consistent with recommended design of section 3.1. With the exception of a window in the rear wall of the crew cab shall have two windows being approximately 5" wide x 15 "high. Location to be determined at the Pre-Construction Conference.

3.8 Cab Doors

The cab doors shall be flush, "barrier clear" style, short doors with hidden .375 stainless steel piano hinges and shall be bolted in place with stainless steel hardware. There will be a cab door seal and, doors will close flush with the side of the cab. A heavy-duty 6" wide belting material will be utilized to prevent the cab doors from opening greater than 90 degrees. All doors shall be equipped with push button type exterior latches, suitable for use with firefighter mittens, and keyed alike locks that are designed to prevent accidental lockout.

The interior latches shall be flush paddle type, which are incorporated into an upper door panel.

3.9 Cab Doors Inner Door Panels

The one piece inner door panel shall be texture painted with Zolotone in place of the standard vacuum formed upper. Brushed Stainless Steel removable inner door panels shall be provided on all doors from at least 10" above floor level to the bottom of the door.

3.10 Cab Doors "Chicago" Style Grab Handles

Chicago style horizontal anti-slip stainless steel grab handles will be provided on the interior of each crew area cab door, positioned to assist cab entry/egress, closing of the door and to provide window protection.

3.11 Cab Interior Wiring

All wiring shall be protected and concealed, and easily accessible for maintenance. Circuit panel shall be designed to allow for installation of future electrical components.

3.12 Cab Insulation

Additional insulation in the cab shall be installed to improve air-conditioning and/or heating in extreme weather climates as well as reducing road noise.

The cab wall, engine cover and roof shall be fitted with a minimum 1" combination foam/solid barrier flame resistant sound/heat barrier. The floor area underneath the cab shall be insulated with the same material as the engine tunnel, held in place with welded studs and expanded aluminum to fully cover the foam. All foam edges shall be sealed.

3.13 Cab Floor

The cab floor is to be flat, covered with non-slip rubber, grey in color, insulated surface for reduced noise level in the cab section.

3.14 Cab Front Wall

The front wall under the dash area of the cab shall be doubled-walled construction with access panels to all closed compartments. The front wall shall be insulated.

3.15 Cab Finished Protection

All interior high contact areas of the cab and crew cabin shall be trimmed with stainless steel scuff protectors. All areas of the cab that pose a potential for head injury of the occupants shall be padded. Specific areas will be determined at the Pre-Construction Conference.

3.16 Cab Crew Area EMS Cabinet

A storage compartment will be mounted against the rear wall of the cab crew area. The compartment will be approximately 24" deep x 53" high x 36" wide. The compartment shall be equipped with two (2) **Robinson Series II** shutter exterior compartment doors. The roll up doors shall be installed on the sides of the storage compartment facing rear crew cab entry doors. The compartment will be constructed of smooth brushed aluminum. Three (3) adjustable shelves will be provided in the compartment.

3.17 Extreme Duty Interior

The cab interior shall be designed for Xtreme Duty, meaning all finished surfaces shall be painted Zolatone gray texture finish or equal. No padded or thermal form materials will be accepted.

NO EXCEPTIONS

3.18 Cab Seating General

Seating shall be provided to accommodate a total of six (6) firefighters; two (2) personnel in the front and four (4) personnel in the rear cab area.

The units shall be bolted in place and positioned so that the crew seat area is fully usable with self-contained breathing apparatus in place.

All seating positions are to be equipped with a metal to metal three point shoulder harness, positive lock quick release seat belts, red in color. Seat belt retractors will be furnished on all seat belts and unused seat belts shall not damage the paint in the cab.

3.18.1 Cab Seating design Front

911 Universal high back seats with three point restraints, The drivers seat shall be Air Ride Type and have a 5" fore and aft adjustments, gray in color, made with Imperial 1200 cloth. The Officer's seat will be designed with removable lumbar support pad and flexible SCBA cavity cover to house a **Scott NXG2 4500 60 minute SCBA**, SCBA bracket (Ziamatic SC-50-H-SF-PHS Double Dipped **NO EXCEPTIONS**). The Officers seat shall be Air Ride Type and have a 5" fore and aft adjustment.

3.18.2 Cab Seating Design Rear

Two (2) fixed rear facing crew seats shall be **911 Universal** contoured recessed SCBA seats with three point restraints, covered with grey Imperial 1200 cloth, with removable lumbar support pad and flexible SCBA cavity cover. The seats shall be fitted with brackets ((Ziamatic SC-50-H-SF-PHS Double Dipped **NO EXCEPTIONS**) to accommodate **Scott NXG2 4500 60 minute SCBA**. One forward facing **911 Universal** seat with flip up seat cushions shall be installed at the back wall of the cab on the passenger's side. The seat shall be installed on a 22" wide aluminum riser.

3.18.3 Front Seat Belt Arrangement

The Drivers seat belt shall extract from the right shoulder and latch at the left hip area. The officers seat belt shall extract from the left shoulder and latch at the right hip area.

3.18.4 Seat Belt Safety Device

The Drivers, Officers, and two (2) rear facing crew seats shall have sensors to detect that seats are occupied. The sensors shall be wired so as not to allow the operation of the apparatus until seat belts of occupied seats are secured.

"NO EXCEPTIONS"

3.18.5 Crew Area Flip Up Seats

Two spring loaded hinged fold up seat bottoms shall be installed outboard on the rear wall of the cab. The rear wall of the cab shall serve as the backrest for the seat.

Each seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor.

3.18.6 Under Seat Storage

The driver and officer seats shall have an 8" high x 16.25" wide x 17.38" deep compartment in the seat box beneath the seats. The compartment shall have a hinged door with an opening of 6" high x 12.50" wide.

3.19 Engine Tunnel Map Storage

A map book storage compartment with front opening lid on a angled riser for three (3") map books will be constructed of 1/8" smooth brushed aluminum and, mounted on the engine tunnel closest to the officers seating position.

3.20 Dash and Gauges

The dash shall be hinged plates for easy access to back of instruments, switches and wiring. The dash shall contain the following gauges, controls, switches and lights and shall be marked as to the function with normal/ danger range marked. Back lighting, bright enough to be viewed in bright daylight, shall be wired through a dimmer switch.

- A. Electric Tachometer
- B. Electric speedometer with odometer with trip meter
- C. Engine coolant temperature gauge and audible warning
- D. Engine oil pressure gauge with audible low pressure warning
- E. Transmission oil pressure gauge with audible low warning device
- F. Voltmeter and Amp meter
- G. Cab door ajar warning device
- H. Fuel level gauge
- I. Engine hour meter
- J. Front air system pressure gauge with audible warning

- K.** Rear air system pressure gauge with audible warning
- L.** Turn signal indicator
- M.** Body compartment door and cab door open light .
- N.** Windshield wiper control, two speed and intermittent
- O.** Running lights and headlight control with instrument lamp rheostat
- P.** Spring parking brake release, with pilot light
- Q.** Transmission shifter to be back lighted
- R.** Battery “ON” indicator light
- S.** Air filter gauge restriction gauge
- T.** Heater/ defroster fan controls
- U.** High beam headlight indicator- blue in color with column mounted control
- V.** Rocker switches with, Two (2) master switches, one for emergency lights for fifteen rocker switches
 - 1. Ground light
 - 2. Scene lights
 - 3. Cross- fire
 - 4. Headlight wig-wag
 - 5. Bar light switches
 - 6. Three position strobe switch
 - 7. Spares
- W.** All DOT required clearance lighting, and the entrance step lighting with automatic switch located on each entrance door into cab area.

3.21 High Idle Switch

High Idle Switch for Electronic Engine: A momentary rocker switch shall be installed in the rocker switch panel to provide a pre-set 1200 RPM elevated engine speed. The high idle shall operate only with the parking brake on and the transmission selector in neutral.

3.22 Cab Master Controls

Cab controls shall include Master Battery Switch, Engine Start Switch, Shut Down Switch (Emergency) and Ignition Switch. Master Battery Switch placement shall be determined at the Pre-Construction Conference. An automatic thermal reset master circuit breaker for the alternator circuit shall be provided.

3.23 Dash Switches

All rocker type dash switches shall be non-load bearing and shall be clearly marked and back lighted. 10 extra rocker switches be supplied loose for replacements.

3.24 Total Manager System

A Class One Total System Manager System be installed. This device shall be equipped with a low voltage light and alarm with high idle activation. The load manager shall manage builder recommended loads to include the air conditioner and fan.

3.25 Cab Operator Indicator Lamps

The center of the instrument panel shall contain a cluster of indicator lamps informing the driver of the following:

RED LAMPS

Low air system one (1) or two (2)
Low engine oil pressure
High engine coolant temperature
High transmission temperature
Low coolant level (with option)
Air filter restriction
Low fuel level (activates at 1/4 full)
Stop engine
High or low voltage
Parking brake set
Cab Tilt not locked
Seat Belt Not Locked

GREEN LAMPS

Battery on
Ignition on
Directional left and right indicators
Auxiliary braking device active
High idle active (with high idle option)

YELLOW

Check engine
Check transmission
ABS brakes
Wait to start
Engine maintenance

BLUE LAMP

High beam headlight on

AUDIBLE WARNING SYSTEM FOR THE FOLLOWING:

Low air system
Low engine oil pressure
High engine coolant temperature
High transmission temperature
Low coolant level
High and low voltage
Stop engine
Cab Tilt not locked
Seat Belt Not Locked

Thermal reset circuit breakers and relays shall be installed behind the electrical center cover.

3.26 Cigarette Lighter

One (1) 12 volt cigarette lighter type receptacles shall be provided in the cab dash on the officer's side.

3.27 Glove Box

The glove box shall be installed in the dash on the officers side. The glove box shall be 7.00"H x 13.75"W x 6.00" D with a hinged non-locking door.

3.28 Mobile Data Terminal/Laptop Provision

A Mobile Data Terminal (MDT) or Laptop such as "**Panasonic Tough book**" or equal shall be provided above the glove box on the officer side of the dash. The mounting area shall be the horizontal surface of the officer side dash. The mounting surface shall be a min. of 9.50"W x 18.75"L.

3.29 Cab Mobile Radio

Manufacture is to supply and install one (1) Dash mount w/ locking bracket, **Motorola XTL 5000 W7 W/ Smart Zone Programming Radio with Antenna** and **Motorola Speaker**. The radio should be mounted to be easily accessed by the Officer.

NO EXEPTIONS

For Technical and compatibility requirements contact Barry Katz @ Atlanta Communications 404-875-9316.

3.30 Personal Communication

There shall be a "FIRE COM" intercom system furnished in the chassis cab. The intercom system shall be installed and have all wiring and components to render the system operational as follows:

- One (1) Master station with two headset jacks in rear of cab.
- One (1) Isolated radio interface module for driver.
- One (1) Radio interface module for officer.
- One (1) Radio cord junction module.
- One (1) Headset mounted at pump panel with storage compartment for headset.
- Four (4) Headsets with over head mounting clip.

3.31 Cab Interior Lighting

Two (2) dome lights in the cab and two (2) in the crew cabin, each with an on/off switch. **Perco #300SP** or equal with red lens, connected to the cab door switch.

Two (2) dome lights in the cab, two (2) in the crew cabin, each with an on/ off switch. **Perco # 300sp** or equal with clear lens, switched on the dash.

3.32 Cab Ground Lighting

The cab shall be equipped with Trucklite brand #40044 under cab lighting. The sealed lights shall be located under the cab at each door. (See wiring instructions in 7.1.18)

3.33 Door Ajar Warning Light

The warning light shall indicate any cab or compartment doors are open. The light shall be mounted at the front of the cab's ceiling on its centerline. Light to be red flashing LED type and shall operate only when the parking brake is released.

3.34 Engine Tunnel Light

A Grote model #60181-5 rectangular 1.5" x 2.25" x 1.13" clear work light shall be provided and installed under the engine tunnel.

3.35 Hand Held Spotlight

An Optronics #KB-4003 hand-held spotlight with momentary switch shall be hard wired and installed in a bracket mounted on the top of the engine tunnel next to the officer.

3.36 Federal Electronic Siren

A Federal PA-4000 electronic siren shall be provided and installed in the center main rocker switch lower panel.

3.37 Cab Facia General

The front fascia shall be capable of being easily removed to provide access for servicing the windshield wiper motor and linkage, ember separator, headlamps, electrical bulkhead connectors, etc.

3.38 Windshield Wipers

Two (2), Two (2) speed electrically operated "wet arm" type wipers with two (2) motors and intermittent features. Spray washer required to have a readily accessible reservoir for fluids. Access to wiper motors shall be through an access panel located on the front cab fascia.

3.39 Cab Factory Air-Conditioning and Ventilation

A ceiling mounted HVAC system shall be provided. The system shall consist of an overhead heater/defroster/air-conditioning unit mounted above the engine tunnel in a central location with dash mounted controls. The system has an engine mounted Seltec TM-21 Freon compressor. The system shall be capable of lowering the cab interior temperature from 100 degrees to 70 degrees within thirty minutes, with a relative humidity of 60 percent.

3.40 Cab Additional A/C

In addition to factory air conditioning, one (1) roof mounted air conditioner/ heater unit shall be installed, with a 57,000 BTU cooling capacity and a heating element rated at 20,000 BTU. The unit shall operate at a maximum of 1800 watts, 120 volt single phase load. The air conditioner unit shall operate from both shore power and generator power. A variable speed fan shall supply a minimum of 305 CFM air flow capacity. The Air conditioner shall be able to cool the cab from 100 degrees F to 70 degrees F in 30 minutes. Opening in roof shall be properly reinforced to support air conditioners and be supplied with a 1" rise to minimize moisture and condensation under the unit.

3.41 Cab Exterior Grab Rails

Four (4) 1-1/4" diameter x 28" long, anti slip stainless steel, grab rails will be provided, located one at each cab door entrance. Grab rail stanchions will be stainless steel and of an offset design, when necessary, to prevent "hand-pinching" when opening or closing the doors.

3.42 Cab Exterior Mirrors

Each forward cab door will have a 16" x 6-1/2", motorized, stainless steel, West Coast type mirror mounted on a swing-away, bow type, stainless steel bracket. Two (2) 4" x 6" wide angle, stainless steel, convex spot mirrors will also be provided and mounted one (1) on each main mirror bracket.

Each mirror will be individually remote controlled from the driver's position.

3.43 Cab Wheel Well Liners

Full width bolt in wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. The two-piece liners shall consist of an inner liner made of smooth aluminum and an outer fenderette 3.50" wide made of 14 gauge 304 polished stainless steel.

3.44 Air Intakes

Air Intakes shall be constructed of polished stainless steel grills. A stainless steel front grill, 39.88"W x 32"H, with a minimum free intake area of 488.8 sq. in. shall be installed on the cab front. Polished stainless steel side air vents, with 148" square inches of effective area shall be located on each side of the cab.

3.45 Cab Paint -Two Tone

The cab shall be painted two tone with a finished break line 1.5" below the cab side windows and down to the top of the grill on the cab front fascia.

All cab painting must be completed prior to the installation of glass accessories or any other cab trim to assure complete paint coverage and maximum corrosion protection. The entire cab must be disc ground to remove any surface oxidation or surface debris that may hinder the paint adhesion.

White paint shall be "2004 Ford Z1" and red paint shall be "2004 Ford F1" or equal. Paint shall warrant for seven (7) years against cracking, checking or peeling and loss of gloss caused by chalking or fading.

Cab underside and doors shall be rust proofed with a ten (10) year or 100,000 mile warranty certificate against perforation issued in the Fire Department's name.

3.46 Apparatus Tracking Devise

A GPS vehicle tracking system and equipment to be installed by the manufacturer, that would allow real time location and monitoring via Internet services.

SECTION 4.0 CHASSIS

4.1 Chassis Warranty

The chassis manufacturer shall warrant to the original purchaser all components and workmanship of the chassis for a minimum of twelve (12) months, unless otherwise specified, with the exception of the actual chassis frame and cross members which shall carry a lifetime warranty. The warranty period shall begin on the date the vehicle is delivered to the original purchaser.

4.2 Frame Paint

The frame and the frame liner shall be painted black separately before assembly. The chassis shall be painted job color after assembly. Paint to be applied before air lines and electrical wiring is installed.

4.3 Rear Chassis Tow Eyes

There shall be two (2) tow eyes attached to the frame rails extending through the rear body panels, or dropped off the bottom and bolted directly to the chassis frame with grade "8" bolts.

4.4 Front Chassis Tow Hooks

There shall be two (2) tow eyes attached to the frame rails located beneath the extended front bumper and bolted directly to the chassis frame with grade "8" bolts. The tow eyes shall not decrease the angle of approach or departure.

4.6 Chassis Lubrication

All moving parts of the chassis shall be provided with pressure lubrication fittings and readily accessible for service.

4.6 Front Bumper

A one piece, polished stainless steel front bumper shall be provided. The bumper shall be a 12" high, two (2) rib wrap-around type.

The bumper shall be extended 16" ahead of the cab.

4.6.1 Front Bumper Apron

A 3/16" bright aluminum tread plate apron shall be installed between the bumper and the front face of the cab. Stainless steel bolts shall be used to attach the apron to the bumper flange.

4.6.2 Front Bumper Air Horns

Dual Grover Stuttertone 21" air horns shall be recessed in the front bumper, one (1) each on the left and right hand sides. A 3/8" airline "teed" equal distance from each horn shall be installed. Air horns actuation shall be accomplished by a dual lanyard cable, accessible to both the driver and officer.

4.6.3 One CPI Speaker

Two (2) Cast Products Inc. bright aluminum 100 watt speaker shall be recessed in the front bumper, on the officer's side.

The speaker shall be bolted to bumper by means of a polished aluminum trim ring on the front face of the bumper.

4.6.4 10" Electric Mechanical Siren

Federal Q2B 10" electric siren shall be recessed in the left hand side of the front bumper. Only the motor will be recessed, with the front stator and grille protruding from the front face of bumper. Two chrome plated protective steel straps shall be installed vertically across the front of the siren grille. Siren shall be activated with foot switches for the officer and driver. A siren-brake switch shall be installed in the switch panel.

4.6.5 Electronic Siren

In addition to the mechanical siren, One (1) Federal EQ2B with a BP200 series "C" driver shall be installed.

4.7 Front Axle

The front axle shall be an ArvinMeritor MFS-18 with a 3.74" drop and a 71.00" KPI. It shall have a capacity of 18,000 lbs. GAWR.

4.7.1 Front Axle Cramp Angle

The hub piloted, MFS-18 model front axle cramp angle shall be a minimum of 45 degrees when using the 315/80R 22.5 front tires.

4.7.2 Front Wheel Bearings Oil Lubricated

The front axle wheel bearings shall be oil lubricated and come equipped with an oil level visual inspection window.

4.7.3 Front Shock Absorbers

Two (2) Bilstein monotubular design, nitrogen gas charged shock absorbers shall be part of the front axle suspension. Bilstein shall warranty the shock for a period of five (5) years.

4.7.4 Steering Column and Wheel

The Douglas Autotech steering column shall be a seven (7) position tilt and 2.25" telescopic type with an 18" steering wheel. The steering wheel shall be covered with black absorbite padding.

The steering column shall contain a horn button, self-canceling turn signal switch, four-way hazard switch and headlamp dimmer switch.

The hydraulic power assist steering gear shall be a TRW TAS-85. A Vickers hydraulic power steering pump shall be gear driven from the engine. The steering ratio shall be 23.3:1 and have 6.2 turns stop to stop.

4.8 Rear Axle

The rear axle shall be an ArvinMeritor model #RS-25-160 with single reduction gearing and shall have a fire service rated capacity of 27,000 lbs. GAWR.

4.8.1 Rear Suspension

The rear suspension shall be a Reyco 79KB vari-rate, captive slipper type, with 57.5" x 3" springs. One (1) adjustable and one (1) fixed torque rod shall be provided.

The spring capacity must meet or exceed the capacity of the rear axle.

4.8.2 Lubricated Rear Wheel Bearings

The rear axle shall have oil lubricated wheel bearings.

4.8.3 Automatic Tire Chains

On-spot automatic tire chains shall be installed at the rear drive wheels. The chains shall be positioned by an air operated device and shall be activated by the rear wheels which shall spin the chain assembly under the moving tire to provide traction in snow and ice. The control shall be installed in the cab accessible to the driver. **A lift up cover to prevent accidental activation shall be installed.**

4.9 Gross Vehicle Weight Rating

The GVWR shall be (45,000) lbs. (18,000 front axle, 27,000 rear drive axle.)

4.10 Air Brake System

4.10.2 Front Axle Brakes

Front axle shall have **Meritor ADB-1560** disc-type brakes with 17" vented rotors and **Bendix** automatic slack adjusters.

4.10.2 Rear Drive Axle Brakes

The rear brakes shall be **Meritor Cam-Master** drum brakes with **Bendix** automatic slack adjusters with heavy duty – extreme service for emergency vehicles shoes installed. The rear axle spring brakes are to automatically apply in case of air pressure loss below 60 psi with a mechanical means for releasing the spring brake chambers.

4.10.3 ABS BRAKES

A **Rockwell/Wabco** anti-lock braking system with an acceleration slip resistance feature shall be installed. System design shall incorporate a dual redundant diagonal circuit electronically controlled through a sensor and tone ring on front and rear axle wheels. A dash mounted anti-lock lamp shall be installed to notify the driver of a system malfunction. A momentary test switch shall be installed to test the system for diagnostic codes.

4.10.4 Brake Air Compressor

The air compressor on the engine shall be a Wabco capable of producing a minimum of 18.7 cfm at 1250 engine rpm. It shall be gear driven, engine oil pressure lubricated and cooled by the engine cooling system. The air compressor shall have a 5-year warranty.

4.10.5 Front Air Chambers

Front air chambers shall be 30 square inches minimum.

4.10.6 Rear Air Chambers

Rear air chambers shall be 36 square inches minimum.

4.10.7 Spare Air Chamber

An additional 1200 cu.in. air reservoir shall be installed and isolated to prevent depletion of the air to the air brake system and to act as a supply tank for operating air equipment. It shall be plumbed with a 90 psi pressure protection valve on the reservoir supply side.

4.10.8 Total Air Chamber Capacity

A FMVSS 121 and NFPA rapid build-up, compliant air brake system shall be provided. It shall include three (3) air reservoirs with a total of 4136 cubic inches of air capacity.

4.10.9 Air Brake Check Valve

Bendix Westinghouse SR-1 valve in conjunction with a double check valve system to provide automatic spring brake application in case of air pressure dropping below 60 psi.

4.10.10 Compressor Air Line

The air line out of compressor shall be a minimum of 3 feet of copper tubing or stainless steel flex.

4.10.11 Air Brake Dryer

A Meritor Wabco system saver 1200 spin-on desiccant air dryer with a 12-volt, 100-watt automatic heated moisture ejector shall be installed in the air brake system.

The air dryer incorporates an internal turbo cutoff valve that closes the path between the air compressor and air dryer purge valve during the compressor "unload" cycle. The turbo cutoff valve allows purging of moisture and contaminants without the loss of turbo boost pressure.

The Meritor Wabco air dryer shall come with a 3-year or 300,000 mile warranty provided by Meritor Wabco Vehicle Control Systems.

4.10.12 Brake Treadle Valve

Bendix Westinghouse dual brake treadle valve for dual brake systems shall be installed.

4.10.13 Auxiliary Air Outlets

Two (2) auxiliary air outlet and one (1) quick release outside air intake male connector shall be provided in the left cab step area for shoreline air intake to maintain air system build up. The air connector supplied shall be compatible with a Milton 783, Parker Hannifin 2C or Meyers 54-401 connector. (2) A quick release air discharge female connector shall be installed in the cab left step area for the use of auxiliary air tools. The air discharge connector shall be compatible with a Milton 787, Parker Hannifin B13 or Meyers 54-410 connector.

4.10.14 Manual Drains On Air Tanks

Manual drains shall be installed on all reservoirs of the air brake system.

4.10.15 Parking Brake Description

Anchorlock #30-36 spring brakes to be furnished on the rear axle. The spring brake shall also be used as a parking brake with the control valve and warning

light dash-mounted. A mechanical means for releasing the spring brake shall be provided in the event of total air loss.

4.10.16 Parking Brake Control Valve

The control valve for the emergency parking brakes shall be installed in such a location that it can be easily reached by either the driver or officer while seated and belted and safeguarded against accidental activation.

4.11 Aluminum Wheels and Tires

4.11.1 Front Wheels

The front wheels shall be 9.00" x 22.5" Alcoa bright polished aluminum, with stainless steel hub covers and chrome lug nuts.

Note: hub covers shall have open centers so not to interfere with oil viewing windows as described in 4.7.2.

4.11.2 Front Tires

The front tires shall be Michelin 315/80R 22.5 20 ply "L" tubeless radial XZA1 highway tread with 22.5 x 9.00, ten (10) stud disc wheels. The tires and wheels shall be rated at 18,000 lbs.

4.11.3 Rear Tires

The rear tires shall be Michelin 12R 22.5 16 ply "H" tubeless radial XDN highway tread with 22.5 x 8.25, ten (10) stud disc wheels. Tires and wheels shall be rated at 27,000 lbs.

4.11.4 Rear Wheels

The single rear axle, enter and outer wheels shall be 8.25" x 22.5" Alcoa bright polished aluminum type, with stainless steel hub covers and chrome lug nuts.

4.11.5 Stainless Steel Wheel Trim Kits

The front and rear wheels shall have stainless steel lug nut covers. The front axles shall be covered with stainless steel baby moons with hole to view oil seal window. The rear axles shall be covered with foam mounted stainless steel high hats.

All stainless steel baby moons and high hats shall carry a lifetime warranty.

4.15 Mud Flaps

Monsato Rainguard or approved equal mud flaps shall be provided for all wheels.

4.16 Engine Type

A Cummins, Model ISM 385 or comparable Detroit Series 60, hp for emergency service, diesel, turbo-charged, with C-brake by Jacobs (Engine brake to act automatically when the accelerator pedal is released). The engine brake will be operated by dash mounted switches to include on/off and high/low operations. The "C" Brake shall disengage when the apparatus is shifted into aerial operation. **NO EXCEPTIONS**

4.16.1 Engine Warranty

The engine must be covered by a five (5) year warranty. All components and accessories installed on the engine must be covered by the OEM warranty.

4.16.2 Engine General

The engine must be certified to be of correct size to handle automatic transmission of make and model bid upon. Engine, transmission, torque converter and drive train ratio must be correctly matched to prevent heat problems in the engine or transmission and capable of providing the GVWR as specified. Road speed at full GVWR is to be set at 65 MPH.

4.16.3 Fast Idle Governor

Engine Fast Idle Governor activates only through the Neutral Safety Switch and after the Parking Brake is activated. One control switch to be mounted in cab in easy access of the driver and a second switch mounted in the right front of the body. Governor must control engine RPM as specified by the apparatus manufacturer to assure maximum capacity of the electrical system.

4.16.4 Engine Air Cleaner

Heavy duty air cleaner, replaceable extra heavy duty cartridge **Donaldson** horizontal 16" diameter with **PVH00-0886 pre-cleaner** and dust evacuator, or acceptable equal. Vertical snorkel to top of cab with pipe braced to frame. Hood to be a **Donaldson GAH00-0607**. Restriction indicator to be a **Donaldson RAX00-2101**.

4.16.5 Engine Oil Filter

Standard heavy duty oil filters full flow spin on type, plus **Fleet Guard LF3000** oil filter or acceptable equal. Mount on engine or frame on R.H. side. Thermos bottle stopper type dipstick.

4.16.6 Engine Warning System

Engine/Transmission guard system for engine Low Oil Pressure, High Water Temperature or coolant loss and Transmission High Temperature shutdown wired into engine warning system. Warning alarm to be both audible and warning light, warning light labeled "Oil, Water Alarm". The alarm is to be activated when the engine guard is activated.

4.16.8 Engine Exhaust Description

The aluminized exhaust system will be installed in accordance with the engine manufacturer's requirements and meet all Environmental Protection Agency and State noise level requirements. Exhaust system components will be securely mounted and easily removable.

The exhaust will discharge on the right side of the apparatus forward of the rear axle. An angled, chrome plated, exhaust deflector will be installed on the exhaust outlet.

4.17 Transmission Description

The transmission shall be an Allison 4000 EVS five (5) speed automatic with electronic controls for Fire Pumper vocation. The transmission shall have two (2) 10-bolt PTO pads.
NO EXCEPTIONS

The transmission shall be equipped with a Allison approved, oil transmission cooler located below the radiator allowing a single depth core and efficient cooling package. The transmission cooler shall be mounted in a manner to allow maximum approach angle by not protruding below the frame more than an inch. The transmission shall have two (2) internal oil filters.

Fourth gear hold-in range may be accomplished by wiring for a pumping application.

4.17.1 Synthetic Transmission Fluid

Castrol "Transynd" or an equivalent synthetic TES 295 transmission fluid shall be utilized to fill the EVS transmission.

4.17.2 Transmission Touch Pad

An Allison pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and reach.

4.17.3 Transmission Mode

The transmission, upon start-up, will select four speed operation. By pressing the "mode" switch on the shift pad (mode on) provides five speed overdrive.

4.17.4 Transmission Warranty

The Allison 4000 EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty. **NO EXCEPTIONS**

4.17.6 Transmission Driveline Performance

The apparatus shall be geared such that it may attain a speed of 65 mph minimum on a flat dry road surface, and maintain a true speed of 45 mph on any grade up to and including 6%. The completed apparatus shall comply with or exceed all requirements of **NFPA 1901 2-9 (current edition) "Apparatus Performance."**

4.17.6 Top Speed

The top speed of the vehicle shall be approximately 65 mph at governed engine rpm.

4.18 Drive Line

The drive line shall be dynamically balanced tubular shaft with a minimum of **Spicer 1810** with glide coat splines on all slip shafts.

4.19 Cooling System General

The cooling system shall be de-signed to meet or exceed the engine and transmission manufacturer and EPA requirements.

4.19.1 Radiator Drains

Cock type drains shall be provided at lowest points in the system.

4.19.2 Radiator Hoses and Clamps

All cooling system and heater hoses, including engine hoses, shall be silicone premium green stripe, with constant torque clamps.

4.19.3.1 Coolant

The cooling package shall have extended life coolant installed. The use of coolant additives will not be allowed, as this is part of the extended life coolant makeup. Engines equipped with coolant filters will be supplied without coolant additives. Water conditioner shall be **Nal-Cool 3000**.

4.19.4 Low Coolant Alarm

A Low Engine Coolant indicator light located in the warning lamp center in the instrument panel shall be provided. In addition, an audible tone alarm shall be provided to warn of a Low Coolant Condition.

4.19.5 Cooling System Fan

The engine cooling system shall incorporate a thermostatically controlled, clutched fan.

When the clutched fan is disengaged it shall facilitate improved vehicle performance, cab heating in cold climates, and fuel economy.

The fan will automatically lock up when the vehicle is placed in pumping mode.

The fan shall be installed on the engine and includes a shroud. Recirculation shields shall be installed to insure that air, which has passed through the radiator, is not drawn through it again.

4.20 Engine Pump Heat Exchanger

An Akron engine cooler used to lower engine water temperature during prolonged pumping operations and controlled at the pump operator's panel shall be provided. The engine cooler shall be installed in the engine coolant system in such a manner as to allow cool pump water to circulate around engine water, thus forming a true heat exchanger action. Cooler inlet and outlet shall be continuous, preventing intermixing of engine coolant and pump water.

4.21 Fuel Tank

A 60 gallon minimum fuel tank shall be installed.

4.21.1 Fuel Tank Fill Inlets

A two (2) inch diameter fill inlet shall be located on the driver and passenger side of the body. A Cast Products heavy duty cast aluminum spring loaded hinged fill door, marked "Diesel Fuel Only". The fuel fills will not interfere with air bottle compartment doors. Steel wire braided reinforced supply and return hoses with reusable fittings shall be installed for tank to engine lines.

4.21.2 Fuel Tank Drain Plugs

A ½” inch NPT drain plug shall be provided in the center of the fuel tank

4.21.3 Fuel Tank Filters

The secondary filter shall be a **Cummins** standard dual spin-on filters, “Coalescer” type.

4.21.4 Fuel Primer Pump

A **Facet #40109** electric fuel primer pump shall be installed on a frame cross member and have a fuel primer momentary switch located on the instrument panel to activate the primer pump. A check valve and by-pass hose shall be installed for normal draw of fuel from the engine fuel pump.

4.21.5 Fuel Shut Off Valve

A fuel shut off valve shall be installed in the fuel draw line at the inlet side of the fuel filter to shut-off fuel supply to the engine in the event that a normal shutdown does not occur.

4.22 Chassis Electrical General

A single starting system shall be installed per NFPA 1901. The electrical system shall be 12 volt, suppressed per SAE J551 with six (6) Douglas BCI-31 950 CCA batteries with 210 minute reserve capacity and 3/0 welding type dual path starter cables per SAE J541.

All electrical wiring in the chassis will be SXL cross link insulated type. Wiring is to be color coded and include function codes every three (3) inches on both sides. Wiring harnesses will be routed in protective, heat resistant loom, securely and neatly installed. Two (2) power distribution centers will be provided in central locations for greater accessibility. The power distribution centers contain automatic thermal self resetting breakers, power control relays, flashers, diode modules, daytime driving light module, and engine and transmission data links. All breakers and relays are utilized in circuits which amp loads are substantially lower than the respective component rating thus ensuring long component life. Power distribution centers will be composed of a system of interlocking plastic modules for ease in custom construction. The power distribution centers are function oriented. The first is to control major truck function and the second controls overhead switching and interior operations. Each module is single function coded and labeled to aid in troubleshooting. The centers also have accessory breakers and relays for future installations. All harnesses and power distribution centers will be electrically tested prior to installation to ensure the highest system reliability.

All external harness interfaces will be of a triple seal type connection to ensure a proper connection. The cab/chassis and the chassis/body connection points will be mounted in

accessible locations. Complete chassis wiring schematics will be supplied with the apparatus.

The starting system shall be supplied with the following:

- One (1) Cole-Hersee #2484 master battery switch
- One (1) Cole-Hersee #EX26654A ignition switch
- One (1) starter button
- One green LED indicator for battery "on".
- One green LED indicator for ignition "on".

4.22.1 Alternator

The alternator shall be a 270 amp 12 volt (minimum) **Leece Neville** equipped with an externally adjustable regulator. The alternator shall have a positive threaded type belt tensioning adjustment. A slotted arm type will not be accepted. The alternator must be capable of delivering at least 60% of its rated capacity at idle speed. A performance scan sheet shall be provided with bid with stationary idle speed and travel.

4.22.2 Battery Description

Six (6) 12 volt 625 CCA (cold cranking amps) (minimum) high cycle batteries shall be installed. Batteries shall be recommended for diesel engines. Battery cables and clamps shall have a lifetime warranty against heat, cold, chemicals and corrosion-such as **Belden**. The starter shall be capable of rotating the engine at starting speed for not less than two (2) minutes with fully charged batteries.

4.22.3 Battery Jumper Studs

Battery jumper studs shall be provided in the driver's step area. The studs allow the vehicle to be jump started or cab to be raised in an emergency due to battery failure.

4.22.4 Kussmaul Battery Conditioner/Air Compressor

A Kussmaul Pump Plus #091-9-1200 air compressor/battery conditioner shall be supplied.

The battery conditioner shall be mounted in the cab behind the driver's seat.

The air compressor shall be installed behind the driver's seat. The air compressor shall be plumbed to the air brake system to maintain air pressure.

The battery conditioner shall have a switch for selection of operation voltage source. When in the AC position it shall operate only from shoreline.

A Kussmaul 20 amp auto-eject receptacle, with weatherproof cover and box, shall be located on the left side of the cab ahead of the driver's door. The receptacle shall automatically eject the plug when the starter button is depressed.

A bar graph indicator shall be provided and installed on the driver's side of the cab indicating the charge level of the batteries.

4.22.5 110-Volt Shoreline Connection - "SUPER" Auto Eject

One (1) Kussmaul "Super" Auto Eject model 091-55-20-120, automatic, 110-volt, 20 amp shoreline disconnect will be provided for the on board, 110 volt battery charging systems and auxiliary A/C unit on cab. The disconnect will be equipped with a NEMA #5-20P male receptacle, which will automatically eject the shoreline when the vehicle starter is energized. The connection will be equipped with a weatherproof cover and will be located in the area directly adjacent to the driver's side cab door. A label will be provided indicating voltage and amperage ratings.

4.22.6 Backup alarm

An ECCO #575 backup alarm shall be installed at the rear of the chassis. The alarm will automatically activate when the transmission is placed in reverse.

Section 5.0 Pump System And Plumbing Side Mount

5.1 Pump System

A Hale Single Stage - **NO EXCEPTIONS.** The pump shall be a mid shift mounted Hale Q-Max Single Stage, 1500 gpm centrifugal pump. The pump and related components as well as the interior of the pump enclosure shall be painted gloss white (Stainless steel components may remain un-painted). The pump panels shall be designed to be easily removed for person size access to the pump compartment. Drain lines, gauge lines, relief valve lines shall be function color coded.

5.2 Pressure Relief System

An installed Total Pressure Master Relief Valve System, HALE "TPM". The bleeder line from the sensing valve shall be ¾" bleeder valve and shall be located under the panel mounted relief valve control.

5.3 Thermal Relief Valve

A HALE Model TRV-L 120 Thermal relief valve, installed. The discharge must be within sight of the pump operator's position.

5.4 Bleeder Valves

A ¾" brass bleeder valve with a quarter turn handle shall be installed on all discharges and suctions. The valve must be located away from the suction storage area.

5.5 Pump Panel Gauge Color Coding

The following labeling system shall be employed in the label process of valves, intakes and discharges:

- a. Hose Reels – Gray
- b. Inlets – Burgundy
- c. Deck Guns – Silver
- d. Preconnects - One (1) Orange; Two (2) Red; and Three (3) Yellow
- e. Discharges: One (1) Green; Four (4) Brown; Two (2) Blue; Five (5) Lt. Purple; and Three (3) Pink

5.5.1 Water Tank Level Gauge

The water level gauge shall be an installed FRC Tankvision located on the pump panel. Exact location to be approved at the pre-build conference.

5.7 Auxiliary Engine Cooler

An engine cooler used to lower engine water temperature during prolonged pumping operations and controlled at the pump operator's panel shall be provided. The engine cooler shall be installed in the engine coolant system in such a manner as to allow cool pump water to circulate around engine water, thus forming a true heat exchanger action. Cooler inlet and outlet shall be continuous, preventing intermixing of engine coolant and pump water.

5.8 Pump Cooler

The pump shall have a 3/8" line installed from the pump discharge to the booster tank to cool the pump during sustained periods of pumping when water is not being discharged. The pump cooler shall be controlled from the pump operator's panel by a 3/8" snubber valve.

5.9 Instrument Panel

A FRC "INCONTROL" instrument panel shall be installed. Exact location to be approved at the pre-build conference.

5.10 Double Crosslay Hose Bed

The cross lay hose bed(s) shall be designed to carry 200 feet of 1-3/4" double jacket fire hose. Stacked cross lay hose bed(s) shall be located to the left lower quadrant of the

operators pump panel and accessible from operators and passengers side. Each crosslay shall be connected to a separate 2" brass in-line valve which is operated by an Akron 9305 series valve controller and pressure/flow meter. The 9305 shall control a model 8600 Swing out valve.

Each cross lay hose bed will be designed to have a removable tray that locks in place when loaded. Tray shall have 4 four grab handles for easy loading and unloading. Grab handles should be designed in such a way that would not catch or hang up when being loaded and unloaded. Stainless steel roller assemblies shall be provided at the lower outside edges of the crosslay openings and nylon slides installed on the bottom of the compartment for easy operation of tray assembly. (The removable tray will be removed from the hose bed, 1.75" hose will be loaded, and then the tray with hose would be placed back into hose bed)

Each crosslay shall have one (1) 2" mechanical swivel with a 1-1/2" hose connection to permit the use of hose connection to permit the use of hose from either side of apparatus.

Each crosslay/speed lay shall have a 3/4" drain with individual control on the pump operator's panel.

Estimated dimension of each hose bed: 10" wide x 17" high x 72" long.

The exact location, dimensions and operation will be determined at the pre-constructions conference.

5.11 Drivers Side Discharges

Two (2) each 2-1/2" discharge gates shall be located on the left side pump panel. The valves shall be constructed of brass and be of the quarter turn ball type of fixed pivot design to allow for ease of operation at all pressures. It shall come with 2-1/2" National Standard threads and a chrome reducer from 2-1/2" to 1-1/2" with a 1-1/2" cap and chain. The valve body shall be located behind the pump panel. The valve controls shall Akron 9305 series valve controller and pressure/flow meter. The 9305 shall control a model 8600 Swing out valve.

5.12 Passengers Side Discharges

One (1) 2-1/2" discharge gate shall be located on the right side pump panel. An Akron 9305 series valve controller and pressure/flow meter. The 9305 shall control a model 8600 Swing out valve. The discharge shall come with 2-1/2" National Standard threads and a chrome reducer from 2-1/2" to 1-1/2" with a 1-1/2" cap and chain. The right side discharges shall be controlled from both the left and right pump panel; the left panel control shall be the 9305, the left side control shall be an Akron 9303 valve controller.

5.13 Passengers Side LDH Discharge

One (1) 4" discharge gate shall be located on the right side pump panel. An Akron 9305 series valve controller and pressure/flow meter. The 9305 shall control a model 8600 Swing out valve. The discharge shall come with 4" National Standard threads and an adapter from 4" to 5" Stortz with reducer cap from Stortz to 2-1/2" with reducer from to

1-1/2" with a 1-1/2" cap and chain. The right side discharges shall be controlled from both the left and right pump panel; the left panel control shall be the 9305, the left side control shall be an Akron 9303 valve controller.

5.14 Discharge Elbows

The discharge valve shall extend out from the apparatus pump panel with a 30 degree single with chrome plated 2-1/2" NST threads. The 30 degree droop shall be an integral part of the discharge valve.

5.15 Booster Reel

Booster reel, with foot operated electric rewind, will come complete with a 250 reel of NFPA approved 3/4 inch hose and one (1) nozzle with pistol grip, Akron Pyrolite Turbojet with a fixed gallon per minute setting of 12. The reel shall be operated by an Akron 9305 series valve controller and pressure/flow meter. The 9305 shall control a model 8600 Swing out valve.

5.15.1 Roller Assemblies For Booster Reel

The booster hose reel shall be equipped with two (2) heavy-duty, stainless steel roller assemblies, setup to payout hose to each side of the apparatus.

5.15.2 Booster Hose

The booster hose shall be in Fifty (50) foot lengths. Booster reel shall have 300 feet of 3/4-inch rubber covered booster hose, high-pressure type at least 800 lbs test, coupled and installed on the specified booster hose reel.

5.16 Three Inch Deck Gun Discharge

A deck gun discharge shall be provided in the hose pan area above the pump area. The deck gun will be operated by an Akron 9305 series valve controller and pressure/flow meter and Akron 8600 series valve. ADD MONITOR HERE, INCLUDE ACCESSORIES.

5.17 2.5 Inch Suction On Each Side Pump Panel

One (1) 2.5 inch suction inlet shall be provided on each side pump panel and shall be controlled from the left side operators panel. The right side inlet shall be controlled from both right and left side. All inlets shall be controlled with Akron 9303 series valve controllers.

5.18 Chrome Elbow

A 2 ½" NST 30 degree chrome plated discharge elbow shall be supplied for the rear discharge with 2 ½" to 1 ½" reducers and 1 ½" caps and chains.

5.19 Gated Steamer Connections

Both right and left steamers shall be equipped with Hale MIV (master intake valves) suction valves. These valves shall be fitted behind the pump panel. The valves shall be equipped with electric/manual controls. The right side MIV shall be controlled from both the right and left side pump panels. The apparatus will be equipped with two (2) 40' sections of 5" Key (# RC50-400)Rubber covered Supply Line with 5" Stortz connections of each end of the hose, two (2) 6" NST to 5" swivel Stortz connection will be provided, two (2) 5" Stortz to swivel 4 ½" NST connections will be provided, two(2) 5" Stortz to swivel 2 ½" NST will be provided.

The steamer extension shall not extend more than three (3) inches beyond the pump panel.

5.20 Hale Oil-Less Primer With Semi-Automatic Priming Valve

A Hale Semi-Automatic Priming Valve will be installed in conjunction with the Oil-Less Primer.

5.21 Stainless Steel Plumbing

All plumbing associated with the pump will be stainless steel.

5.22 Discharge Rear

Two (2) each 2.5 inch discharge shall be provided on the rear area, below the hose bed opening, and shall be controlled from the left side operators panel. They shall come with 2-1/2" National Standard threads and a chrome reducer from 2-1/2" to 1-1/2" with a 1-1/2" cap and chain. Each discharge shall be connected to a separate 3" brass in-line valve which is operated by an an Akron 9305 series valve controller and pressure/flow meter. The 9305 shall control a model 8600 Swing out valve.

5.23 Pump Packing

The packing rings will be of a unique permanently lubricated, long life graphite composition and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.

5.24 Heat Exchanger Discharge

A gated line shall be installed to provide water from the fire pump to the chassis supplied heat exchanger to assist in engine cooling during pumping operations. The heat exchanger line shall be controlled at the pump operator's panel.

5.25 Fire Pump Warranty

The Hale fire pump shall carry the manufacturer's two (2) year warranty covering defective parts and workmanship. A copy of the pump manufacturer's warranty policy shall be provided with the completed apparatus.

5.26 Trim Panel

A bolt on stainless steel trim panel shall be provided for easy access to all intakes and discharge valves for repair or removal.

5.27 Foam System

The apparatus shall be equipped with Hale FoamLogix 3.3 or Foam Pro #2002 (or equal) fully automatic electronic direct injection foam proportioning system. The system shall be capable of proportioning Class A and most high viscosity Class B foam concentrates. The proportioning system shall meet NFPA standards for foam proportioning systems and the design shall have passed testing against SAE automotive reliability standards appropriate for the application.

The foam injection system shall be plumbed to the onboard foam concentrate tank or tanks and to both 1.75" pre-connected cross lay discharge and the 2 ½ " passengers rear discharge only.

5.27.1 Auxiliary Pick-Up Tube

The foam system shall have an auxiliary foam pickup that would allow the operator to fill the onboard foam tanks from ground level and also be capable of supplying the foam operation from a secondary source.

5.27.2 Single Foam Tank Plumbing System

The foam tank shall be plumbed with three-quarter inch (3/4") valve and corrosion resistant hose from the foam tank to the foam inlet. There shall be a three-quarter inch (3/4") drain line furnished on the foam tank. Drain valve to be located on foam tank with corrosion resistant hose piped to below the frame level of the chassis.

5.27.3 Foam Tank

A 30 gallon polypropylene foam tank cell shall be supplied as an integral part of the water tank. A stainless steel pressure/vacuum vent device shall be mounted on the top of the tank. Tank shall be plumbed to the on board "Class A" foam system. A valved drain shall be provided at the lowest point of the foam tank. The drain shall be plumbed to drain directly to the surface below the apparatus without contacting other body or chassis components.

5.27.4 Foam Tank Warranty

TANK MUST HAVE A LIFETIME WARRANTY!!! – NO EXCEPTIONS

5.27.5 Labeling Foam Tank

The following labels shall be attached to the foam tank:

"CLASS A FOAM TANK FILL"
"WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM"

5.28 Booster Tank

A 500-gallon capacity polypropylene booster tank shall be provided.

5.28.1 Booster Tank To Pump Plumbing

A 3" *Akron* ball type gated suction valve shall be furnished from the tank to the pump, complete with a flexible connection and enclosed in the pump compartment.

A check valve shall be provided and installed in the line between the tank and the pump to prevent the possibility of backfilling the booster tank through the tank to pump suction line.

Tank suction shall be located in a sump assembly located below the bottom of the tank, properly baffled to prevent surging of water. A 3" cleanout plug shall be provided in the bottom of the tank sump.

5.28.2 Booster Tank Fill/Cooling Line

A gated discharge line from the pressure side of the pump to the tank shall be furnished so the tank can be filled from draft or hydrant. Valve shall have control on the operator's panel. The valve is to be one and one-half inch, (1-1/2") swing out type ball valve and be plumbed to tank with flexible type hose.

5.28.3 Booster Tank Poly

The booster tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity.

A forward mounted sump shall be provided in the tank. The sump shall be constructed of polypropylene and be located in the left front quarter of the tank. A polypropylene pipe shall be installed that will sweep from the front of the tank to the sump location. The sump shall have a 3" N.P.T. threaded coupling and 3" Ball Valve. This shall be used as a combination clean out and tank drain. An anti-swirl plate shall be located above the sump.

There shall be two standard tank outlets; one for tank-to-pump suction lines, and one for a tank fill line. All tank couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

The tank shall carry a lifetime warranty from its manufacturer.

5.28.4 Booster Tank Fill Tower

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of polypropylene and with a minimum dimension of 8" x 14" outer perimeter. The fill tower shall be located in the left front corner of the tank. The fill tower shall have a polypropylene screen and a polypropylene hinged cover. Inside the fill tower, shall be fastened a combination vent overflow pipe. The vent overflow shall be polypropylene pipe that is designed to run through the tank and shall be piped behind the rear wheels.

5.28.5 Booster Tank Mounting

The tank shall be mounted on hard rubber cushions to isolate the tank from road shock and vibration. The tank shall be completely removable without disturbing or dismounting the apparatus body structure.

5.29 Pump Panels

The right and left side pump panels shall be constructed entirely of aluminum, and be coated with black thermo-plastic material. The panels are to be completely "bolted" in place for ease of removal.

• **BIDDER COMPLIES WITH ALL ITEMS AS STATED IN SECTION FIVE (5)**

YES_____NO_____ Bidder Initials_____

SECTION 6.0 BODY

6.1 Body Construction General

There shall be large enclosed compartments on both sides of the body, starting at the front of the hose body and continuing to the rear of the apparatus. These compartments shall be as large as possible, using all available space.

The entire body shall be welded constructed. The use of pop rivets in any portion of construction will not be acceptable. This includes side body sheets, inner panels of compartment door, and any other structural portions of the body.

All compartment electrical wiring shall be easily accessible. Lights will be provided in each compartment and above each shelf and should be adjustable with shelving.

All interior seams and corners shall be sealed with silicone based caulk prior to painting.

The body shall be fabricated of aluminum extrusions; smooth aluminum sheet and aluminum tread plate.

Compartments to be sweep out design and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity.

All exterior compartments shall have polished aluminum drip moldings installed above the doors where necessary to prevent water from entering the compartments.

Only stainless steel bolts, nuts, and sheet metal screws shall be used in mounting exterior trim, hardware and equipment.

Estimated overall dimensions of the body: 144" long x 96" wide x 106" high.

6.2 Body And Pump House Flex Joint

The body and pump house shall be a separate freestanding component forming a true flex joint between the body and pump house. The intent is to allow the pump house or the body to be easily removed as a single unit without disturbing the other and to provide a flex joint between the two modules. Designs where the pump house and body are interjoined as a common unit do not meet the technical

requirement of providing a flex joint or the repair ability requirement of these specifications.

6.3 Compartment Ventilation

All exterior compartments shall be provided with ventilation units in the back wall of the compartment. The approximate size shall be six (6) inches square. These units must prevent the entry of dirt and moisture.

6.4 Compartment Flooring

Equipment compartment floors and shelves shall be fitted with **Dura-dek**.

6.5 Roll-Up Compartment Doors

All compartments (unless otherwise specified) shall be equipped with **Robinson Series II** shutter exterior compartment doors. The doors shall be of the locking type and all keyed alike. This includes all rollup doors both inside and out.

6.5.1 Compartment Door Finish

The doors shall be constructed of box frame type satin finish anodized aluminum slats. The slats exterior surface is flat, while the rear surface is designed to prevent loose equipment from jamming the door.

6.5.2 Door Ajar Warning Devise

A magnetic door ajar switch system shall be provided built-in to striker blocks and end caps of lift bars. Refer to 3.33 Door Ajar Warning System.

6.6 Wheel Well Liner And Fenderettes

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum to prevent corrosion.

The rear wheel wells shall be radius cut for a streamlined appearance. A polished stainless steel ¼ rounded fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners.

6.7 Apparatus Compartmentation

The aluminum tread plate tops on each side of the body shall be extended out and downwards a minimum of .50" over the compartment doors forming a drip rail. Corners shall be TIG welded.

6.8 Adjustable Shelves

Adjustable shelves as indicated on numbered compartment list shall be fabricated from **3/16 aluminum 3003H-14 alloy smooth plate**. Shelves shall have two (2),
2"

vertical flange along the front and rear edges. The shelves shall be designed to be used with the flanges in the upward position to hold, various equipment on the shelf, or in the downward position for a lip free shelf surface. All shelves shall be fully adjustable, from top to bottom of the compartment.

6.9 Slide Out Equipment Trays (300lbs)

Sliding tool trays shall be provided per compartment list. Capacity ratings are in the
extended position. Trays shall be fabricated of **3/16" aluminum 3003H-14 alloy smooth plate** with double flange at outer edge. The tray edges shall be broken with a minimum 3" flange on each side, and welded on corners to form a box type tray surface. Automatic locks shall be provided for both the "in and out" positions. The release mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand. Trays shall be attached to the chassis frame for load transfer and to reduce stress on the body. The trays shall slide fully out of the compartment. Sliding tracks shall be manufactured by **Grant 3300 series** as per compartment list. Slides shall be constructed of formed steel with ball bearings mounted in triple track rails.

6.10 Slide Out Equipment Trays (1000 Lbs.)

Slide- out equipment trays, as indicated on numbered compartment list, shall be fabricated from **3/16" aluminum 3003H-14 alloy smooth plate**. The trays shall
be built
with a 3" vertical lip, with welded corners, to form a box type tray surface.

The tray shall be pin locked in the compartment as well as at 50% and 100% of extension for loading or as a stationary work surface. The tray shall extend 100% out of either side of the body.

6.11 SLIDE-OUT DROP-DOWN EQUIPMENT TRAY (300 Lbs.)

Slide-out drop-down equipment trays, as indicated on numbered compartment list, shall be fabricated from **3/16" aluminum 3003H-14 alloy smooth plate**. Trays shall be built with a 3" vertical lip, with welded corners, to form a box type tray surface.

Sliding tracks shall provide a 30 degree tilt out of compartment and have a capacity of 300lbs. Slides shall be manufactured of heavy duty structural steel with sealed ball bearing rollers.

Sliding track shall allow tray to extend approximately 80% out of compartment.
A
spring-type locking device shall be used for securing tray "in" compartment.

6.12 1-3/4" Pre-Connected Crosslay Assembly

The cross lay hose bed(s) shall be designed to carry 200 feet of 1-3/4" double jacket fire hose. Stacked cross lay hose bed(s) shall be located to the left lower quadrant of the operators pump panel and accessible from operators and passengers side. Each cross lay hose bed will be designed to have a removable tray that locks in place when loaded. Tray shall have 4 four grab handles for easy loading and unloading. Grab handles should be designed in such a way that would not catch or hang up when being loaded and unloaded. Stainless steel roller assemblies shall be provided at the lower outside edges of the crosslay openings and nylon slides installed on the bottom of the compartment for easy operation of tray assembly. (The removable tray will be removed from the hose bed, 1.75" hose will be loaded, and then the tray with hose would be placed back into hose bed)

Estimated dimension of each hose bed: 10" wide x 17" high x 72" long.

The exact location, dimensions and operation will be determined at the pre-constructions conference.

6.13 Pump Compartment Access Door

The passenger's side pump panel shall be provided with a full panel width vertically hinged access door located in the upper portion of the side panel. This door shall be approximately 18" high and as wide as possible, and shall be constructed of polished aluminum tread plate. Two (2) flush mounted, push type latches shall be furnished to hold the door closed. The inspection door shall be attached with a stainless steel hinged and have a retainer cable attached to prevent the door from opening too far.

6.14 Full Width Intermediate Step - Pump Compartment

There shall be a full width intermediate step furnished and installed on the side of the pump compartment. The top surface to the intermediate step shall have a slip-resistant surface meeting NFPA requirements. The intermediate step shall be fabricated of polished aluminum tread plate material and be bolted to the pump compartment.

6.15 Dunnage Over Pump

There shall be a dunnage compartment furnished above the pump. The dunnage compartment shall be as wide as possible from side to side, and be a minimum of 12" deep. The floor shall be bolted in place and removable for access to the pump.

6.16 Recessed Hose Well In Passenger Side Running Board

A recessed hose well storage area shall be installed in the passenger's side running board, below the main pump and capable of storing fifty feet (50') of five inch (5") preconnected soft suction hose.

There shall be four (4) 1-inch drain holes in the hose well.

6.17 Hose Bed

The apparatus hose bed is to be properly reinforced without the use of angles or structural shapes, and free from all projections that might injure the fire hose.

The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body.

The upper rear interior of the beavertail extrusions on the right and left side shall be overlaid with brushed stainless steel to protect the painted surface from damage by hose couplings

6.17.1 Hose bed Capacity

The hose bed approximate dimensions are as follows: 144" long x 48" wide x 30" high or capable of caring the following:

- * 1000 feet of 5 inch hose
- * 1000 feet of 3 inch hose
- * 400 feet of 1-3/4 inch hose

6.17.2 Hose Bed Flooring

Floors of the hose beds are to be provided with removable slat style extruded aluminum hose bed gratings, spaced 1/2" apart for proper hose ventilation. Hose

bed gratings are easily lifted out of the main hose bed for access to the top of the specified booster water tank.

6.17.3.1 Hose Bed Divider

Four (4) Adjustable hose bed dividers shall be provided in the main hose bed.

The hose bed divider(s) shall be fabricated of 1/4" smooth aluminum sheet stock, pressed into a "T" shaped aluminum extrusion for added strength along the bottom edge of the divider.

The divider shall be fully adjustable, mounted using aluminum "C" channel tracks at the front and rear of the divider for full side to side adjustment.

6.17.4 Hose Bed Cover Vinyl

A red vinyl coated nylon hose bed cover shall be provided and designed to cover the entire main hose bed area. The hose bed cover shall be fastened with Velcro and three (3) quarter turn-fasteners across front and Velcro on both sides. The rear flap shall be weighted with quarter turn-fasteners at the corners.

6.18 Back Board Storage

There shall be storage provided above the stacked Pre-Connect Compartments to accommodate two (2) backboards. (Refer to 6.12)

The compartment will be horizontal with horizontal hinged compartment doors accessible from both the passenger and operator side. Doors shall be secured by one (1) chrome ¼ turn D-Handles with lock on each door.

Interior compartment dimensions approximately 10 inches wide x 17 inches high
x 72
inches long.

6.19 Driver Side Compartments

Three body compartments shall be furnished as follows:

No. 1 compartment ahead of the rear wheels with full height roll-up door.

No. 2 compartment above rear wheels with roll-up door.

No. 3 compartment behind the rear wheels with full height roll-up door.

6.19.1 No. 1 Compartment

Approximate interior Dimensions – 46" wide x 63" high x 22" deep

Approximate door opening – 40" wide x 56" high

Three (3) adjustable shelves

One (1) 300# Slide out tray approximate dimensions – 36" wide x 20" deep x 8" high.

Six (6) recessed LED light fixtures (Location determined at Pre-Construction)

6.19.2 No. 2 Compartment

Approximate interior Dimensions – 52" wide x 36" high x 22" deep

Approximate door opening – 49" wide x 32" high

Three (3) adjustable shelves

Four (4) recessed LED light fixtures (Location determined at Pre-Construction)

6.19.3 No. 3 Compartment

Approximate interior Dimensions – 42" wide x 63" high x 22" deep

Approximate door opening – 36" wide x 56" high

Three (3) adjustable shelves

One (1) 300# Slide out tray approximate dimensions – 32" wide x 20" deep x 8" high.

Six (6) recessed LED light fixtures (Location determined at Pre-Construction)

6.20 Rear Body Compartments

Two body compartments shall be furnished as follows:

No. 4 compartment centered in the body between the hose bed and the booster tank.

No. 5 compartment centered in the body at the tail board below compartment

6.20.1 No. 4 Ladder Compartment/Ceiling Hook

The ladders shall be mounted in a fully enclosed compartment, below the hose bed above the booster tank, on individual poly scratch resistant slides. There shall be an aluminum tread plate door on the rear with two (2) chrome ¼ turn D-Handles with lock for access to the interior of the compartment.

Estimated compartment dimensions 46" wide x 10" high x 130" long with a 24" wide x 10" high x 44" long extension at the right front extending into the pump compartment.

The compartment will house One (1) 24 foot extension ladder, One (1) 14 foot roof ladder, One (1) folding 10 foot ladder, One (1) 8 foot ceiling hook, and One (1) 10 foot ceiling hook.

The awarded bidder shall furnish the ground ladders and Pike Poles. See equipment section of this document for make and model of ladders.

6.20.2 No. 5 Extrication Compartment

Approximate interior Dimensions – 46" wide x 42" high x 36" deep

Approximate door opening – 40" wide x 36" high

One (1) 1000# Slide out tray approximate dimensions – 36" wide x 32" deep x 2" high.

Four (4) recessed LED light fixtures (Location determined at Pre-Construction)

This compartment shall house the emergency extrication equipment. All tools shall be mounted in such to allow easy access while being secured during transport.

The extrication inventory of Fulton County Fire Department is solely that of Hurst Power Tools. Because of compatibility and standardization **NO EXCEPTIONS** will be accepted.

The following extrication equipment shall be supplied by the awarded apparatus manufacturer for each apparatus purchased:

- one (1) Hurst Power Unit JL-4GH-SI Mod # 363R169
- one (1) Hurst JL MOC Cutter Mod # 362R386
- one (1) one Hurst Spreader ML-16S Mod # 362R196
- one (1) Hurst Ram JL-60C Mod #257R099
- one (1) Hurst Ram JL-20C Mod # 257R095

- one (1) Hurst Attachment Kit Mod # 257R037
- one (1) Hurst 30' low pressure hose (green) Mod # 353R090
- one (1) Hurst 30' low pressure hose (orange) Mod # 3530022
- one (1) low pressure electric hose reels (green) Mod # 542R047
- one (1) low pressure electric hose reel (orange) Mod # 542R040

6.21 Passenger Side Compartments

Three body compartments shall be furnished as follows:

No. 6 compartment behind the rear wheels with full height roll-up door.

No. 7 compartment above rear wheels with roll-up door.

No. 8 compartment ahead of the rear wheels with full height roll-up door.

6.21.1 No. 6 Compartment

Approximate interior Dimensions – 42" wide x 63" high x 22" deep

Approximate door opening – 36" wide x 56" high

Three (3) adjustable shelves

One (1) 300# Slide out tray approximate dimensions – 32" wide x 20" deep x 8" high.

Six (6) recessed LED light fixtures (Location determined at Pre-Construction)

6.21.2 No. 7 Compartment

Approximate interior Dimensions – 52" wide x 36" high x 22" deep

Approximate door opening – 49" wide x 32" high

Three (3) adjustable shelves

Four (4) recessed LED light fixtures (Location determined at Pre-Construction)

6.21.3 No. 8 Compartment

Approximate interior Dimensions – 46" wide x 63" high x 22" deep

Approximate door opening – 40" wide x 56" high

Three (3) adjustable shelves

One (1) 300# Slide out tray approximate dimensions – 36" wide x 20" deep x 8" high.

Six (6) recessed LED light fixtures (Location determined at Pre-Construction)

6.22 Hard Suction Hose Trays

Hard suction hoses shall be mounted in extruded aluminum, self-draining carrier trays with hold down device. The carrier tray(s) shall be mounted on the driver's side of the body.

The hard suction hose shall be provided by manufacturer. See equipment section of this document for make and model of hard suction hose.

Exact location to be determined at Pre-Construction Conference

6.23 Air Bottle Compartments In Wheelwell

6.23.1 Drivers Side

SCBA storage compartment shall be provided and located in the driver side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect finish of the air cylinder.

6.23.2 Passenger Side

SCBA storage compartment shall be provided and located in the passenger side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect paint finish of the air cylinder.

6.23.3 SCBA Compartment With O-Ring Gasket

All SCBA compartments mounted in the wheel well area shall have an o-ring gasket with push button latch assembly.

6.24 Side And Rear Overlays

Overlay panels shall be constructed of polished aluminum tread plate. Polished aluminum overlay shall be provided and installed in the following areas:

- The front face of each side compartment.
 - The rear body face and vertical area above tailboard and below hose bed.
 - Drivers side and passenger compartment top extending down over side to the compartment doors then forming a drip rail above doors.
 - Front face of hose bed above booster tank.
- Overlay shall be installed with "Aluminized" stainless steel bolts to prevent corrosion.

6.25 Slip-Resistant Walkway Surface

All exterior surfaces designated as stepping, standing, and walking areas shall have an aluminum slip-resistant overlay material installed.

6.26 Rear Step/Tailboard

A rear step/tailboard shall be furnished that is a minimum of 18.00" deep and full width of the apparatus body, from rub rail to rub rail. The tailboard shall be provided with a removable casting on each corner for a pleasing appearance.

6.27 Handrails

Extruded Aluminum hand rails shall be provided in the following locations:

6.27.1 Rear Hand Rails

Two (2) vertical access handrails shall be provided and mounted on the rear of the apparatus body, one on each side. Each rear handrail to be approximately 48" long.

6.27.2 Pump Panel Hand Rails

An access rail shall be provided and installed on the upper section of the driver and passengers side pump house. Approximately 24" Long

6.28 Folding Steps

Two (2) NFPA approved folding steps shall be provided and mounted in the following locations:

6.28.1 Rear Tailboard Steps

Two (2) steps on each side for a total of four (4). The steps shall be capable of supporting a 500-lb. load.

6.28.3 Pump Panel Steps

Six (6) steps shall be provided and mounted on the front face of the apparatus body, three (3) on the driver's side, and three (3) on the passenger's side. The step shall be capable of supporting a 500-lb. load.

6.29 Generator

A 8-KW "Onan CMHG 8,000 Series" hydraulically powered generator system generator shall be furnished and installed per the manufacturer's recommendations.

A "HOT SHIFT" PTO and hydraulic pump unit shall be provided and installed. Interconnecting hoses shall be of the size, pressure rating and length recommended by the generator manufacturer.

A Onan electronic controller shall be mounted in an enclosed compartment with the circuit breaker box, which is connected to the generator system. The controller provides precise voltage and frequency control, including automatic load and temperature compensation. A soft start engagement reduces mechanical stress on the vehicle transmission, PTO and the generator system. The controller's integrated system monitoring warns the operator of over-current and/or excessive hydraulic fluid temperature condition prior to system damage.

The 110-volt air conditioner mounted on the driver side rear of the chassis cab shall be wired into the Onan generator.

The remote control switch panel for the generator shall be located in the chassis cab.

The generator shall be mounted in the hose bed, between the fill towers. There shall be guards in the front of the generator to prevent equipment storage from blocking air flow

Section 7 Lighting

The total lighting system shall be installed according to DOT and NFPA guide lines. Where possible all lighting shall be led type light fixtures, unless other wise specified. Wiring data shall be provided with the completed apparatus. The following electrical equipment and lights shall be provided and installed

7.1 Non Emergency Lighting

7.1.1 Tail Lights Whelen Led

Two (2) Whelen 60R00XRR LED rectangular red stop/tail lights shall be provided and mounted at the rear of the body, one on each side.

7.1.2 Directional Lights Whelen Led

Two (2) Whelen Model 60A00TAR amber arrow directional signal LED lights shall be provided and mounted at the rear of the body, one on each side below the stop/tail lights.

7.1.3 Backup Lights Whelen Led

Two (2) Whelen Model 60C00WCR rectangular clear backup LED lights shall be provided and mounted, one on each side at the rear of the body. The backup lights shall be mounted below the rear stop/tail and directional lights.

7.1.4 Clearance Lights

The vehicle clearance lights shall be LED and recess mounted within the rear center tailboard step.

7.1.5 License Plate Bracket

A license plate mounting bracket shall be provided complete with a chrome-plated shielded indirect type light. Bracket shall be mounted at the rear of the apparatus body.

7.1.6 Compartment Lighting

All side and rear exterior equipment compartments shall be provided as specified in "Section 6.0" with LED clear compartment lights mounted to the side walls of the compartment. Compartment lights shall switch on automatically when the compartment door is opened and switch off when the door is closed.

A single master switch for compartment lights shall be install in the cab that will control all lighting in the compartments.

The wiring connection shall be made with a weather resistant plug in style connector.

7.1.7 Rear Step Lights

A recessed 2-1/2" light with clear lens shall be provided to illuminate the step at the tailboard area.

7.1.8 Pump Compartment Work Light

A pump compartment work light shall be provided and installed within the pump compartment area complete with a switch mounted on the light head. The wiring connection shall be made with a weather resistant plug in style connector.

7.1.9 Under Body Lighting

There shall be two (2) lights furnished below the pump house running board, one on each side.

7.1.10 Under Body Lighting Rear Step

There shall be two (2) lights furnished below the rear step, one on each side.

7.1.11 Rear Deck Lights

Two (2) Unity #AG series, chrome-plated, six-inch rear mounted lights with swivel type mounting bracket and individual switches shall be provided.

Both lights shall be a 35-watt 75,000 candlepower spot lamp.

These lights will automatically activate when the vehicle transmission is in reverse gear.

7.1.12 Pump Panel Lights

Three (3) clear LED lights with an on/off switch at the panel, shall be mounted under a light shield directly above the left and right pump panel.

7.1.13 Amber Marker Lights

A rectangular shaped clearance light with an amber colored lens shall be installed on either side of the apparatus body, recessed in the rub rails.

The amber marker lights shall be wired to the turn indicator as required on vehicles over 30' long.

7.1.14 Engine Compartment Light

An engine compartment light shall be installed to illuminate the engine compartment.

7.1.15 Driver Side Scene Light

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted on the driver side of the body. Light shall be mounted on an 18-degree

downward angled, polished aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Driver's Side Scene Light".

The light shall be mounted on the pump house.

7.1.16 Passenger Side Scene Light

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted on the passenger side of the body. Light shall be mounted on an 18-degree downward angled, polished aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Passenger's Side Scene Light".

The light shall be mounted on the pump house.

7.1.17 Recess Mounted Traffic Direction Bar

A Whelen Model TA-850L traffic advisor light bar, 44" long with eight LED modules, shall be provided and mounted facing the rear of the apparatus with control console mounted in the truck cab.

The traffic advisor shall be recess mounted into the rear of the apparatus body.

7.1.18 Work Light Switch

A single master switch shall be installed in the chassis cab and be labeled: "WORK LIGHTS".

The master switch shall operate the following lights:

- Rear Step Lights - 7.2.7
- Under Body Lighting – 7.2.9
- Under Body Lighting Rear Step - 7.2.10
- Cab Ground Lighting – 3.33
-

7.1.19 Headlight Flasher

The headlight circuit of the chassis shall be provided with a heavy-duty headlight flasher system designed for emergency vehicles. Flasher shall include override for high beam headlights and controlled by switch located on the electrical module in the chassis cab. Headlight flasher to be turned off when the park brake is set.

7.2 Emergency Lighting

The upper and lower zones "A", "B", "C", "D" of the apparatus shall have the following emergency lighting equipment:

Lower Zones "A", "B", "C", "D" Emergency Lighting

7.2.1 Light Bar

One (1) Whelen model FN72VLED 72" light bar mounted on chassis cab roof to meet the NFPA upper zone A lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Light bar to have the following equipment:

- (8) LED assemblies
- "V" ends

7.2.2 Rear Warning

Two (2) Whelen model RB6PRP rotating beacons, and two (2) 60R00FRR LED lights mounted on the rear of the apparatus body to meet the NFPA Zone B, C, D upper level lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Each light to have the following equipment:

7.2.3 Upper Zone "B, C, D" Light Mounting

The upper rear lights designated for Upper Zone "B" shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

7.2.4 Zone A Front Lights

There shall be two (2) Whelen model 60R00FRR LED flashing lights furnished on the front face of the apparatus to meet the NFPA Zone A lower level lighting requirement.

7.2.5 Zone B & D Side Lights

There shall be three (3) Whelen model 60R00FRR LED flashing lights furnished on each side of the apparatus to meet the NFPA Zone B & D lower level lighting requirement. One LED light mounted as far forward as possible, one LED light mounted as far to the rear as possible, and one LED light mounted between the front and rear lights. The LED lights shall be connected to a flasher and be activated through the master emergency light switch located on the electrical console. Each light shall have a red lens.

7.2.6 Zone C Rear Lights

There shall be two (2) Whelen model 60R00FRR LED flashing lights furnished on the rear of the apparatus to meet the NFPA Zone C lower level lighting requirement.

7.2.7 Alternating Flashing Headlight System

An alternating flashing wig-wag system, wired to the apparatus headlights, will be installed. The wig-wag system will be individually switched at the master light console and wired through the load management system to be shut down when load management is required.

7.3 Telescoping Quartz Lighting

A quartz light shall be provided and mounted on the apparatus, wired to the 120-volt power source. The light shall be UL listed as "Scene lights for Fire Service Use". Light shall be controlled by a switch located on the generator powered sub panel. (see 6.29)

The light shall be attached to a side mounted, bottom raise telescoping, anodized aluminum pole. The telescoping pole shall have a four (4) foot extension with friction lock mechanism. The telescoping pole shall be pre-wired with heavy-duty retractile cord with pigtail extending out the bottom of the lower tube.

The telescoping light shall be Kwik Raze Magnafire 3000 model #KR-537-S.

The lights shall be mounted one each side of the pump panel. Exact locations will be determined at the Pre-construction Conference.

The lights shall be mounted to allow personnel to raise the lights from the ground without having to climb on the apparatus.

SECTION 8.0 PAINT/FINISH

Apparatus Finish details must match as close as possible the newest fire apparatus in the existing Fulton County Fleet.

Two tone chassis color shall consist of a specified color of lead- free, chromate-free Medium solid acrylic urethane paint applied from the bottom of the window line up, including the roof. White paint shall be "2004 Ford Z-1" and red paint shall be "2004 Ford F-1". This paint break line shall match existing units in service in Fulton County.

All cab painting must be completed prior to the installation of glass, accessories or any other cab trim to assure complete paint coverage and maximum corrosion protection. The chassis frame and undercarriage components shall be finish painted black, and all exterior components shall then be re-mounted.

8.2 Paint Warranty

The paint system shall be warranted for 5 years against cracking, checking, peeling and loss of gloss caused by chalking or fading

8.2 Fulton County Logo

A Fulton County Logo shall be applied to the front doors, which matches the existing Fulton County Units. The Logo shall meet these specification **NO EXCEPTIONS**

Logo to be approximately 1' x 1' shall be screen printed FULTON FIRE/RESCUE.

Five spot colors printed on reflective white vinyl.

(White, Gold-PMS 110, Black, Red, Tan)

Clear Laminated and contour cut

Vinyl above the logo to read "FULTON COUNTY"

Vinyl below the logo to read "FIRE DEPARTMENT"

Metallic gold letter with black out line.

8.3 Scotchlite Retro-Reflective Stripe

A white **SCOTCHLITE** retro-reflective stripe shall be applied to the perimeter of the apparatus. The stripe shall be NFPA compliant with "Dial 911" cut into the stripe on the rear compartment doors.

8.4 Sealing Of Vinyl Detailing

All edges of logos, stripes and lettering are to be sealed

8.5 Stay Back Sign

A sign, minimum 4" x 30", shall be painted white and lettered "STAY BACK 500 FEET" with reflective letters. The sign shall be securely attached to the rear of the apparatus.

8.6 Vinyl Reflective "Chevrons"

Vinyl reflective "Chevrons" or diagonal 4" striping shall be install on the rear of the body. The colors "Red" and "Lime Yellow" will alternate diagonally to provide a minimum of sixteen (16) square feet of coverage. Exact location/s will be determined at the Pre-Construction Conference.

8.7 Vehicle Numbering

A "U" shaped bracket for numbering plates shall be installed with screws and nylon spacers. The channel shall be formed by three (3) pieces of extruded aluminum or stainless steel "J" channel

There shall be two (2) plates one on each side of the body. Plates shall be 8-3/4" x 16" x 1/8" painted job color on both sides and have an 8" white **SCOTCH-LITE** number applied to one side only. (To be discussed at pre-construction conference)

8.9 Touch-Up Paint

There shall be one (1) quart of each color, touch-up paint furnished with the truck.

8.10 Gold Leaf Striping

Striping to be gold leaf mylar with black shading placed on both sides of the apparatus body. Striping to be applied to outer perimeter of body and have four (4) scrolls on each side. (To be discussed at pre-construction conference)

8.11 Reflective Safety Stripe

A 1" x 4" x 1" wide 3M brand Scotchlite #680-10 reflective multi-stripe shall be affixed to the perimeter of the vehicle. There shall be a 1" gap between each of the stripes. Striping shall be placed up to 60" above ground level and shall conform to NFPA reflectivity requirements. At least 60% of the perimeter length of each side and width of the rear, and at least 40% of the perimeter width of the front of the vehicle shall have reflective stripe.

The stripe shall be white in color.

The stripe shall be white on the cab and body and red on the unpainted roll up doors.

Section 9.0 Optional Equipment

The following list of optional items/equipment must be separately priced to allow the Fire Department to customize according to need and according to their budgetary requirements. If an item listed comes as standard equipment on the base model unit you are offering, and is included in the base unit price, please indicate "STD EQUIP" in the

blank provided; otherwise the dollar amount bid on these items will be the additional costs(s) to the base unit quoted.

All prices quoted are to include all necessary labor and parts required to mount the loose equipment to the Fire Engine. Mounting locations will be determined and specified by the Fire Department.

9.1 Hand Tools (Wooden handles not acceptable)

Price Each

1. _____ Flathead axe, 6# weight (Zico FPC-6-E)
2. _____ Pickhead axe, 6# weight (Zico APC-6-E)
3. _____ Z-Hook head/gas shut off pike pole w/ solid fiberglass handle, 6 foot (Zico ZH-72-G)
4. _____ Z-Hook head pike pole w/ solid fiberglass handle, 8 foot (Zico ZH-96-D)
5. _____ Sheet Rock Hook with claw type head and "D" handle, foot (Zico PCC-6)
6. _____ Hooligan tools, 36 inch (Hooks Unlimited Pro-Bar 30")
7. _____ Pry bar, 36 inch
8. _____ Pry bar, 48 inch
9. _____ Dead Blow Rubber mallet 3 lb. (Zico SF-4)
10. _____ Bolt cutters, 36 inch, (Rigid Brand)
11. _____ Heavy Duty Steel Tool Box, containing the following tools:

- | | |
|------------------------------------|---|
| 1- large vise grip | 1- needle nose pliers |
| 1- small vise grip | 1- 3 piece adjustable wrench set,
small, medium, large |
| 1- long nose vise grip | 1- straight, heavy duty tin snips |
| 1- lineman pliers | 1- regular pliers |
| 1- 9 1/2" arc joint pliers | 1- 9 piece screw driver set |
| 1- claw hammer (fiberglass handle) | 1- 7" wide jaw diagonal cutting
pliers |
| 1- small pipe wrench | 1- large pipe wrench |
| 1- hack saw with extra blades | 1- set of cold chisels |
| 1- spring loaded center punch | 1- ball pein hammer |
| 1- key hole saw with extra blades | 1- 3/8" socket set |

- 1- utility knife with extra blades
- 1- large bastard file
- 1- professional quality impact goggles

- 12. _____ Spanner wrench/Hydrant wrench set, Red Head, Mounting bracket #82009, spanner #101, Hydrant wrench #105
- 13. _____ Lock Out Kit – such as a Gall’s #P-LT018 to include slim jim, under the window tool, button finger tool, slide lock tool, wedge, nylon case and manual.
- 14. _____ 4- Akron, hole type, ¾” booster spanner wrenches
- 15. _____ Hydrant tool bag, Estex Mfg. Co. #2113-22, #4 canvas
- 16. _____ Forcible entry tool bag, Estex Mfg. Co. #2609F
- 17. _____ Ice chest, 48 quart
- 18. _____ Fire Rake (Zico FR-5)
- 19. _____ Double Face Sledge Hammer 10 lb. (Zico BD-10-ESG)
- 20. _____ Round point shovel (Zico RPS-DG)
- 21. _____ Square Point shovel (Zico SPS-DG)

9.2 Appliances

- 1. _____ Akron Hose Clamp to accommodate 3” hose
- 2. _____ Akron #3433 Deluge/Deck gun to include top mount fixture, stream shaper, stacked tips, and 1200 gpm fog nozzle, ground base, ground base mount.
- 3. _____ Akron Water Thief Style #1573
- 4. _____ Akron #2730, 2 ½” fog nozzle
- 5. _____ Akron #1735, 1 ¾” break-apart fog nozzles with pistol grips, the fog tip shall come equipped with a stop that prohibits the fog from stopping the flow of water.
- 6. _____ Akron #2393, 2 ½” playpipe
- 7. _____ Akron #2950, 1 ½” to 1 ½” 95 gpm foam eductor

8. _____ Akron #1718P, 1 ½” fog nozzle
9. _____ Akron #1581, 2 ½” to 1 ½” gated wye
10. _____ Akron # Double males 2 ½”
11. _____ Akron # Double females 2 ½”
12. _____ Akron #772, three inch hose jacket with mounting bracket
13. _____ Barrel Strainer for hard suction, 6”
14. _____ Hydrant Valve, #1828
15. _____ Akron Foam Tube #768
16. _____ Akron Mercury Quick Attack Monitor #3443, with 4447 Fog nozzle, 2420 Stack Tips and Akron Storage bracket.
17. _____ Akron 4 Way Hydrant Valve # 627
18. _____ Akron Black Max Piston Intake valve # 7980

9.3 Fire Extinguishers

1. _____ ABC type dry chemical extinguisher with vehicle mounting bracket, #20
2. _____ CO2 extinguisher with vehicle mounting bracket #20

9.4 Rope

1. _____ Utility rope – 7/16” Nylon Blue Water Kermantle, 150’ Hank/ unit
Gold/Blue **NO EXCEPTIONS!!!**
2. _____ Life safety rope – ½” Nylon Blue Kermantle, 200’ Hank/ unit ,orange/gold
NO EXCEPTIONS!!!
3. _____ Rope bags – large, orange

9.5 Foam

1. _____ Class “A” Foam, compatible with Hale Foam Master equipment in 5 gallon containers.
2. _____ 3/6% AFFF/ATC in 5 gallon containers

- 3._____ "Fire Ade 2000" in 5 gallon containers

9.6 Salvage Equipment

- 1._____ Tarps, Fire Department grade approximately 14' x 18'
- 2._____ Tubs, Square Bottom, galvanized, 18 ½" x 22 ¼" x 11 ½"
NO EXCEPTIONS
- 3._____ Scoops Shovel, Nupla AGS-14

9.7 Lighting

- 1._____ Alpha 2000 telescopic light poles with a 1000 watt, 220 volt quartz light shall be internally mounted in the body. The poles shall allow for 360 degree rotation of the light. A locking knob shall hold the poles at the desired height.
- 2._____ Quartz, portable 500 watt, fire department grade, flood light will be provided. A vehicle mounting base will be provided. A portable, manual rewind, fire department grade, cord reel will be provided with 150' of yellow 2-3 wire. (Plugs will be Leviton 20A, 125V, **NO EXCEPTIONS**)
- 3._____ Three prong twist lock receptacles, with weather resistance covers to be mounted on the body. Plugs will be Leviton 2-A, 125V, Location determined at pre-build conference. **NO EXCEPTIONS!!!**

9.8 Breathing Apparatus

- 1._____ Self-contained breathing apparatus with 45 minute Kevlar bottle, NFPA approved, Scott NXG2 with integrated Scott pass device
NO EXCEPTIONS!!!
- 2._____ Four (4) Kevlar Air Bottles – 45 minute, Scott **NO EXCEPTIONS!!!**

9.9 Medical Equipment

- 1._____ Monitor/Defibrillator Phyiso – Control – Lifepak 12
W/Battery Charger 110v
12 Lead Capable
Function also as Automatic External Defibrillation
Hands free defibrillation
Fax capability
Telementary capable

- 2._____ Medical Bag: Iron Duck Oxygen Bag, (for “D” cylinder) Green with black sides.
- 3._____ Suction Unit: Scott Fastvac #6953
- 4._____ Adult/Pediatric Traction Splint (Home Traction Brand)
- 5._____ Two (2) backboards – Composite (Folding Aluminum Acceptable)

9.10 Extrication Tools, Hurst – No Exceptions!!!

- 1._____ Hurst Power Unit JL-4GH-SI Mod # 363R169
- 2._____ Hurst Spreader ML-16S Mod # 362R196
- 3._____ Hurst JL MOC Cutter Mod # 362R386
- 4._____ Hurst Ram JL-60C Mod #257R099
- 5._____ Hurst Ram JL-20C Mod # 257R095
- 6._____ Hurst Ram JL-30C Mod # 257R097
- 7._____ Hurst Attachment Kit Mod # 257R037
- 8._____ Chain Set, part number 3640003
- 9._____ Hurst 30' low pressure hose (green) Mod # 353R090
- 10._____ Hurst 30' low pressure hose (orange) Mod # 3530022
- 11._____ Hoses, 2- 16’ green #353R091
- 12._____ Hoses, 2- 16’ orange #3530016
- 13._____ Hurst low pressure electric hose reel (orange) Mod # 542R040
- 14._____ Hurst low pressure electric hose reels (green) Mod # 542R047
- 15._____ Roll out trays and mounting for each piece of equipment.

9.11 Hose

All hose couplings shall be American made such as Akron or Red Head.

"NO EXCEPTIONS"

1. _____ Three (3) inch diameter, double jacket, Polyester fire hose with 2.5" couplings, (2000' in 50' section/unit) such as manufactured by North American.
2. _____ One and three-quarter (1 ¾) inch diameter, double jacket, Polyester fire hose with 1.5" couplings, (800' in 50' sections/unit), such as manufactured by North American.
3. _____ One and one half (1 ½) inch diameter, double jacket, Polyester fire hose, such as hose manufactured by North American (100' in 50' sections/unit).
4. _____ Three (3) inch diameter, double jacket, Polyester fire hose with 2.5 couplings, such as hose manufactured by North American (25'/section)
5. _____ Five (5) inch diameter supply hose in 30' sections with 5" Stortz Connections
6. _____ Five (5) inch diameter supply hose in 100' sections with 5" Stortz connections.
7. _____ 10-foot length of 6" lightweight PVC, flexible fire department suction hose, first quality non-collapsible type, of a design having a low friction loss and which will not collapse under a vacuum of 23".

Hard suction hose to be equipped with lightweight couplings. Long handles on female and rocker lugs on male couplings.

9.12 Replacement/Extra Parts

1. _____ Replacement set of cooling system hoses
2. _____ Replacement set of belts
3. _____ Replacement set of filters
4. _____ Replacement power pack for strobes
5. _____ Replacement bulbs for light bar
6. _____ Replacement strobe tubes for "F-Head" Strobes
7. _____ Replacement set of case hardened tire chains and tighteners

9.13 Communication Device

1. _____ 35 Watt, 800 MHZ radio, such as a Motorola Spectra C-9 with antenna radio, installed
2. _____ 800 MHZ portable radio with rapid charger, such as a Motorola MTS 2000, shipped loose
3. _____ Motorola Mobile Data Terminal, Mobile Work Station 520, with modom, radio and vehicle mounting
4. _____ Panasonic Tough Book Laptop

9.14 Miscellaneous Equipment

1. _____ A Dura-Deck compartment floor protection in sufficient quantity to be placed on all compartment and shelf floors.
2. _____ Ziamatic air pack brackets with air straps and double dip clips. For use with 45 minute Scott Kevlar air bottles.
3. _____ Akron 2443 - spanner/hydrant wrench holders, to include 2 spanner wrenches and one (1) universal hydrant wrench.
4. _____ Akron 373 EZ-LOK, 2 ½ inch nozzle vehicle brackets.
5. _____ Akron AS510 and AS520, axe brackets
6. _____ Akron PPBH- Prybar holders, chrome
7. _____ Mounting bracket for Hooligan tool
8. _____ Nozzle cups with chrome plated, top mount bracket, for use with Akron Booster nozzle.
9. _____ Zico Model SAC-44 Quic-Chok NFPA compliant folding wheel chocks mounted under the apparatus running boards in model SQCH-44H horizontal mounting bracket.
10. _____ Supervac, 18" Honda, gasoline fired fan
11. _____ SL40 Streamlights (Spot/Flood) with 12 volt mountable chargers

9.15 Ground Ladders

1. _____ ALCO-LITE Model PEL-24

2. _____ALCO-LITE model PRL-14
3. _____ALCO-LITE model FL-10
4. _____ALCO-LITE model CJL-10
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TDA Aerial Truck

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Overall Apparatus Dimensions and Requirements

Wheelbase of Tractor Chassis- 150"

Overall Length of Trailer Body- 330"

Overall Width of Body- Not including Mirrors	96"
Overall Length of Apparatus-	57' (Max)
Overall Height- not including antenna	11' 6"
Ground Clearance- Lowest Point of Cab and Body	20" Minimum
Angle of Departure-	14 degrees
Angle of Approach	10 degrees (min)

Note: Estimated measurements dependent on chassis components, axles, tires, frame and suspension.

Section 1.0 General Requirements

Intent

It is the intent of these specifications to cover the construction and delivery of a newly completed Fire Tractor Drawn Aerial Apparatus as herein specified. These specifications cover the minimum requirements as to the type of construction, finish, and tests, to which the apparatus must conform, together with certain details as to equipment to be furnished with the vehicle. The apparatus shall conform to all appropriate requirements of the National Fire Prevention Association Standards No. 1901, Current Edition, unless otherwise noted herein.

Unless clearly identified as "NO EXCEPTIONS", items in this Request for Bid identified, described, or referenced by a brand name or trade name description, are intended to be descriptive, but not restrictive and are to indicate the quality and characteristics of products that may be offered. Products may be considered for award if such products are clearly identified in the bids and are determined by Fulton County to meet its needs in all respects. If the bidder proposes to furnish another product, such products shall be clearly identified in the bid. The evaluation of the bids and the determination as to equality of products offered shall be the responsibility of the County and will be based on information furnished by the bidder. Accordingly, to insure that sufficient information is available, the bidder may be required to submit literature and/or samples prior to award. These shall be supplied within seven (7) days, if required. The Bid Price for the vehicles/equipment as outlined shall be furnished by the Bidder and shall include all fees associated with the same. No compensation for the vehicle(s) and

equipment shall be requested until equipment and or vehicle is accepted by Fulton County Fire Department. Compensation shall be payable within Ninety days of delivery and acceptance, or as outlined in a lease, lease purchase agreement if applicable.

Term of Contract:

The term of the contract will be from award date through twelve (12) succeeding months from date of award by the Board of Commissioners. Fulton County reserves the right of an option of five (5) additional twelve (12) month renewal period pending availability of appropriated funding, contractor compliance with county rules and policies, satisfactory performance reports and Board of Commissioners' approval. Option year price increases shall not exceed the consumer price index (CPI) as published by the Bureau of Labor Statistics of the U.S. Department of Labor with particular reference to the average shown on such index for "all items" for the Atlanta Metropolitan area.

A section of this bid is dedicated to optional equipment. The bidder will provide the following information for each item found under this section: Item description, manufacturer, model number (if alternate item is offered in place of the described option) and price PER EACH item offered for bid. Provide quantity price breaks where appropriate.

Each section is followed by a "Comply: YES:_____ NO:_____" area. This area must be completed for the bid to be acceptable. Bidders that check "YES" are stating that the manufacturer agrees to; construct, fabricate, and/or provide all items as stated in the section specifications. Bidders that check the "NO" area are required to reference the page and item number and state in detail the description including the manufacturer, model number of the alternate on a separate sheet. Bidders must complete, and turn in this package to be considered for award of the bid. Manufacturer's specifications will be accepted in addition to this completed format. Where manufacturer's specifications differ from the purchaser's specification, the purchaser's specifications will prevail. Unless it is impossible to engineer the requested design to meet the purchaser's specification. Should such a problem arise, details of conflict should be noted and will be resolved at the Pre-Construction Conference.

The specifications provided have been established to conform to the current fleet cab and body design, tools and equipment in an attempt to standardize the fleet. The apparatus shall conform to all appropriate requirements of the National Fire Prevention Association Standards No. 1901, Current Edition, unless otherwise noted herein.

1.2 Pre-build and Inspection Trips:

The successful bidder will provide three (3) mandatory factory inspection trips for up to four (4) Fire Department representatives, to the apparatus manufacturer's facility. In the event that the manufacturers factory is located in excess of one hundred fifty (150) miles from Atlanta, air fare, lodging, and general travel expenses will be the sole responsibility of the manufacturer. The factory visits will occur at the following stages of production of the apparatus.

1. Pre-Construction/Blueprint Review conference will be held at the vendor's factory site subsequent to award, but PRIOR TO ANY PRODUCTION of the requested vehicles. This conference will be held for a minimum of one full business day (Eight (8) hours). Final design will be confirmed at this conference. Review of specifications at the Pre-Construction Conference shall be in order of this completed specification. Four (4) Fulton County personnel will attend the Pre-Build Conference.
2. Chassis and Body Pre-Paint inspections will be held at the manufacturer's factory. Four (4) Fulton County personnel will attend the Pre-Paint Inspection.
3. Final Inspection Trip will be performed at the factory where the vehicle(s) is assembled. The Inspection Trip will be conducted when the vehicle(s) is substantially completed, just prior to leaving the factory. The purpose of this trip is to insure compliance with the specifications. Four (4) Fulton County personnel will attend the inspection.

The purchaser maintains the right to inspect the apparatus, within manufacturer's normal business hours, at any other point during construction. Expenses incurred during nonspecific inspection visits will be the responsibility of the purchaser.

During inspection visits, the purchaser reserves the right to perform actual performance tests to evaluate completed portions of the unit. Testing will be accomplished with the assistance and resources of the contractor.

1.3 Delivery:

The vehicle(s) must be delivered under their own power to the Fulton County Fire Department Maintenance Shop, located at 5890 Plummer Road, Atlanta, Georgia 30336. Delivery of this apparatus is 180 days after award of bid.

1.4 Acceptance:

The vehicle(s) will be formally accepted when the vehicle(s) have been inspected by Fulton County and found to comply with the specifications and Purchase Order.

1.5 Liquidated Damages:

The County has the right to seek from the contractor liquidated damages for non-compliance and or non-performance in the execution of the contract. The Contractor shall pay liquidated damages in the sum of five hundred dollars (\$500.00) for each consecutive calendar day beyond the delivery date stated in the contract. The amount shall fund optional equipment as selected by the Department.

1.6 Bond Requirements:

Bonds must be written by a licensed Georgia agent in a company licensed to write surety bonds in the State of Georgia, and acceptable to Fulton County. Bonds are to be made

out to Fulton County. Attorneys-in-fact who sign bids and/or contract bonds must file a certificate and effectively dated copy of their power-of-attorney with each bond. Bonds shall be written by a surety listed in the Department of Treasury circular 570; authorized to do business in the State of Georgia; and shall have an underwriting limitation in excess of 10% of the bid amount. The bonds and Surety shall be subject to approval by the Attorney of the County.

Each bidder must submit with the Bid a bid Bond in an amount equal to 10% of the total bid amount. The Bid Bond will serve as a guarantee that if a respondent's bid is accepted and the successful bidder fails to execute the required contract and bonds within ten (10) days of notice of award, then the bid bond will be forfeited and retained by Fulton County in lieu of other legal remedies.

The successful bidder will be required to provide a Performance Bond in an amount equal to Ten Percent (100%) of the quoted cost, within seven (7) days after Notice of Award and prior to the start of any work.

NO EXCEPTIONS

1.7 Insurance Requirements:

Insurance must be written by a licensed Georgia agent in a company licensed to write insurance in the State of Georgia, and acceptable to Fulton County.

Policies and/or certificates certifying policies are to contain an agreement that the policies will not be changed and/or cancelled without a ten (10) day prior notice to Fulton County, as evidenced by return receipts of registered or certified letters.

Each bidder shall submit with the Bid proof of ability to provide the insurance coverage indicated below, if awarded the contract. The successful bidder shall furnish certificate of insurance to the County within seven (7) days of Notice of Award and prior to the start of any work. Insurance in the following amounts will be required for this project.

1. Product Liability Insurance in an amount of not less than twenty five million dollars (\$25,000,000.00) per occurrence for both bodily injury and/or property damage.
2. In the event that a major portion(s) of the apparatus (ie, chassis and/or body) is not designed, fabricated, and assembled by the prime builder, a separate Certificate of Liability Insurance, for each in an amount of not less than Fifteen million dollars (\$15,000,000.00) must be provided by each sub-contractor.

1.8 Information to Be Submitted:

Bids shall clearly indicate the legal name, address and telephone number of the bidder. Bids shall be signed above the typed or printed name of the signer. The signer shall have the authority to bind the bidder to the submitted bid. Bidders shall submit the original and four (4) copies of the bid document.

1. References- Provide a list of references, contacts and telephone numbers of other Fire Departments that have procured similar equipment as specified in this document.

2. Exact Body Layout- Bidders shall provide with bid, an exact body layout of the proposed vehicle.

1.9 Storage of Apparatus on Fulton County Property:

Storage of the vehicle(s) on Fulton County property is permissible, but does not constitute acceptance. The vehicle(s) remain the responsibility of the vendor until acceptance by the County.

1.10 Training Program:

The successful bidder shall provide an on-site training program for training of fire department personnel. This program shall be designed to assure complete understanding of all aspects of the apparatus in the operating environment. After delivery of the unit(s), the successful bidder shall supply a factory trained, qualified, field service technician for a minimum of three (3) days.

The training program shall be designed to instruct fire department personnel on the operation, preventive maintenance and care of the apparatus. The training program shall be oriented to the hands on approach, addressing introductory service skills utilizing the vehicle and include, but not be limited to the following:

1. Explain the operation of the entire apparatus. Each participant shall actually use the apparatus and be taught the necessary steps for safe operation.
2. Troubleshooting will be emphasized and reinforced continually throughout the training period.
3. Preventive Maintenance procedures.

1.11 No Divided Responsibilities

The apparatus manufacturer shall honor and be responsible for all warranties for a minimum of one year after delivery to ensure compatibility, serviceability and to eliminate divided responsibilities.

NO EXCEPTIONS

1.12 Compliance

The apparatus must conform to the motor vehicle laws of the State of Georgia, NFPA and all Federal safety laws in effect at the date of shipment.

1.13 NFPA vs. Fulton County

In those areas where Fulton County specifications conflict with the requirements of NFPA 2003, latest edition, NFPA 2003 requirements shall prevail. Fulton County Fire Department Logistics Division shall be notified of the conflict for resolution.

1.14 Operation/Service

The following applicable documentation shall be supplied upon delivery:

Three (3) copies of Operation/Service manual of the apparatus operations and service manuals supplied by components manufacturers. Two (2) hard copies and One (1) copy on "CD/s"

Ladder certification including manufactures record of apparatus construction details.

Certificate of compliance to Electrical Warning System Low Voltage test.

Line Voltage Electrical System test certificate.

(NFPA 19-14.4.1 - 19.14.4.2)

NO EXCEPTIONS

1.15 Excepted Format

Manufacturer's specifications will be accepted in addition to this completed format. The format of manufactures specification shall be the same general format of this completed specification. Review of specifications at the Pre-Construction Conference shall be in order of purchasers completed spec.

NO EXCEPTIONS

Section 2.0 Construction Specifications

2.1 General Design

The apparatus will be a Medium Cab four (4) door, Tractor Drawn Tiller Apparatus will be equipped with a One Hundred Foot (100') Aerial Ladder. Body compartments shall be constructed of heavy duty materials, to withstand extreme service applications and carry fire fighting tools and equipment.

2.2 Overall Height

The maximum clearance height of the apparatus, including any accessories shall not exceed eleven and one half (11' 1/2") feet. Underbody ground clearance shall be maximized by mounting brackets and components as high as practical

2.3 Alternate Fasteners

Self tapping / self threading fasteners or pop rivets shall not be used in applications where a bolt, machine screw, nut incerts and 12 point star lock washer can be used.

2.4 Cab and Body Warranty

Manufacturer shall warrant cab and body for Ten (10) years against corrosion and structural failure.

Section 3.0 Cab

Cab General

The cab and chassis shall be a medium four door, aluminum tilt cab, built specifically for the fire service, specializing in chassis design for all fire service applications. The cab and chassis shall meet the requirements of the National Fire Protection Association Standard 1901, (2003 edition or latest edition). The cab interior will be the "Open-Space" design with no wall or window between the front and rear crew area to allow direct communication, better visibility and air circulation in the cab.

For Cab/chassis design comparison only, refer to the following manufacture designs:

Spartan Motors Flat Floor Gladiator Classic, model GA40M

3.2 Cab Dimensions

The cab dimensions will be consistent with the Cab design of that laid out in 3.1.

3.3 Cab Tilt

The cab tilt actuation shall be an electric over hydraulic lift pump with a control box on a pendent for safe visual operation. The lift system shall have an ignition interlock and red lock down indicator lamp which shall illuminate when holding "down" switch to indicate safe road operation. Two cab tilt cylinders shall be provided with velocity fuses in each cylinder port. Hydraulic tilt operation shall be capable of tilting the cab a minimum of 45 degrees for service. The cab pivot points shall be engineered to withstand the full weight of the cab.

3.4 Cab Tilt Mechanism

Hydraulic cylinders will be detachable to allow removal of the engine for major service. A mechanical cylinder stay bar and release will be provided to insure a positive lock in the tilted position. Additionally, the cab tilt device shall be both electrically and hydraulically interlocked to prevent inadvertent activation of the cab tilt system.

3.5 Cab Tilt Operation and Safety

1. A "CAB NOT LATCHED" indicator light will be provided in the cab dash-warning cluster.

2. A dual switch control will be provided for the cab tilt system.
3. An auxiliary manual hydraulic cab lift back up system will be furnished in the event of total electrical shutdown. NO EXCEPTIONS

3.6 Cab Glass

All cab glass used in the cab shall be not less than 75% tinted. Full roll down windows shall be provided in each door, with worm gear drive cab operation. Left and right windshields shall use the same interchangeable glass. Padded sun visors shall be provided for the driver and officer.

3.7 Cab Glass Dimensions

All cab glass shall be consistent with recommended design of section 3.1. With the exception of a window in the rear wall of the crew cab shall have two windows being approximately 5" wide x 15 " high. Location to be determined at the Pre-Construction Conference.

3.8 Cab Doors

The cab doors shall be flush, "barrier clear" style, short doors with hidden .375 stainless steel piano hinges and shall be bolted in place with stainless steel hardware. There will be a cab door seal and, doors will close flush with the side of the cab. A heavy-duty 6" wide belting material will be utilized to prevent the cab doors from opening greater than 90 degrees. All doors shall be equipped with push button type exterior latches, suitable for use with firefighter mittens, and keyed alike locks that are designed to prevent accidental lockout.

The interior latches shall be flush paddle type, which are incorporated into an upper door panel.

3.9 Cab Doors Inner Door Panels

The one piece inner door panel shall be texture painted with Zolotone or equal in place of the standard vacuum formed upper. Brushed Stainless Steel removable inner door panels shall be provided on all doors from at least 10" above floor level to the bottom of the door.

3.10 Cab Doors "Chicago" Style Grab Handles

Chicago style horizontal anti-slip stainless steel grab handles will be provided on the interior of each crew area cab door, positioned to assist cab entry/egress, closing of the door and to provide window protection.

3.11 Cab Interior Wiring

All wiring shall be code or better to comply with SJ893 SAE standard. In addition all wiring is to be protected, concealed, and easily accessible for maintenance. Circuit panel shall be designed to allow for installation of future electrical components.

3.12 Cab Insulation

Additional insulation in the cab shall be installed to improve air-conditioning and/or heating in extreme weather climates as well as reducing road noise.

The cab wall, engine cover and roof shall be fitted with a minimum 1" combination foam/solid barrier flame resistant sound/heat barrier. The floor area underneath the cab shall be insulated with the same material as the engine tunnel, held in place with welded studs and expanded aluminum to fully cover the foam. All foam edges shall be sealed.

3.13 Cab Floor

The cab floor is to be flat, covered with non-slip rubber, grey in color, insulated surface for reduced noise level in the cab section.

3.14 Cab Front Wall

The front wall under the dash area of the cab shall be doubled-walled construction with access panels to all closed compartments. The front wall shall be insulated.

3.15 Cab Finished Protection

All interior high contact areas of the cab and crew cabin shall be trimmed with stainless steel scuff protectors. All areas of the cab that pose a potential for head injury of the occupants shall be padded. Specific areas will be determined at the Pre-Construction Conference.

3.16 Cab Crew Area EMS Cabinet

A storage compartment will be mounted against the rear wall of the cab crew area. The compartment will be approximately 24" deep x 53" high x 36" wide. The compartment shall be equipped with two (2) Robinson Series II shutter exterior compartment doors. The roll up doors shall be installed on the sides of the storage compartment facing rear crew cab entry doors. The compartment will be constructed of smooth brushed aluminum. Three (3) adjustable shelves will be provided in the compartment.

3.17 Extreme Duty Interior

The cab interior shall be designed for Xtreme Duty, meaning all finished surfaces shall be painted Zolatone gray texture finish or equal. No padded or thermal form materials will be accepted.

NO EXCEPTIONS

3.18 Cab Seating General

Seating shall be provided to accommodate a total of six (6) firefighters; two (2) personnel in the front and four (4) personnel in the rear cab area.

The units shall be bolted in place and positioned so that the crew seat area is fully usable with self-contained breathing apparatus in place.

All seating positions are to be equipped with a metal to metal three point shoulder harness, positive lock quick release seat belts, red in color. Seat belt retractors will be furnished on all seat belts and unused seat belts shall not damage the paint in the cab.

3.18.1 Cab Seating design Front

911 Universal high back seats with three point restraints, The drivers seat shall be Air Ride Type and have a 5" fore and aft adjustments, gray in color, made with Imperial 1200 cloth. The Officer's seat will be designed with removable lumber support pad and flexible SCBA cavity cover to house a Scott NXG2 4500 60 minute SCBA, SCBA bracket (Ziamatic SC-50-H-SF-PHS Double Dipped NO EXCEPTIONS). The Officers seat shall be Air Ride Type and have a 5" fore and aft adjustment.

3.18.2 Cab Seating Design Rear

Two (2) fixed rear facing crew seats shall be 911 Universal contoured recessed SCBA seats with three point restraints, covered with grey Imperial 1200 cloth, with removable lumber support pad and flexible SCBA cavity cover. The seats shall be fitted with brackets ((Ziamatic SC-50-H-SF-PHS Double Dipped NO EXCEPTIONS) to accommodate Scott NXG2 4500 60 minute SCBA. One forward facing 911 Universal seat with flip up seat cushions shall be installed at the back wall of the cab on the passenger's side. The seat shall be installed on a 22" wide aluminum riser.

3.18.3 Front Seat Belt Arrangement

The Drivers seat belt shall extract from the right shoulder and latch at the left hip area. The officers seat belt shall extract from the left shoulder and latch at the right hip area.

NO EXCEPTIONS

Seat Belt Safety Device

The Drivers, Officers, and two (2) rear facing crew seats shall have sensors to detect that seats are occupied. The sensors shall be wired so as not to allow the operation of the apparatus until seat belts of occupied seats are secured.

NO EXCEPTIONS

3.18.5 Crew Area Flip Up Seats

Two spring loaded hinged fold up seat bottoms shall be installed outboard on the rear wall of the cab. The rear wall of the cab shall serve as the backrest for the seat.

Each seat shall be equipped with a red 3-point shoulder harness with lap belt and an automatic retractor.

3.18.6 Under Seat Storage

The driver and officer seats shall have an 8" high x 16.25" wide x 17.38" deep compartment in the seat box beneath the seats. The compartment shall have a hinged door with an opening of 6" high x 12.50" wide.

3.19 Engine Tunnel Map Storage

A map book storage compartment with front opening lid on a angled riser for three (3") map books will be constructed of 1/8" smooth brushed aluminum and, mounted on the engine tunnel closest to the officers seating position.

3.20 Dash and Gauges

The dash shall be hinged plates for easy access to back of instruments, switches and wiring. The dash shall contain the following gauges, controls, switches and lights and shall be marked as to the function with normal/ danger range marked. Back lighting, bright enough to be viewed in bright daylight, shall be wired through a dimmer switch.

- A. Electric Tachometer
- B. Electric speedometer with odometer with trip meter
- C. Engine coolant temperature gauge and audible warning
- D. Engine oil pressure gauge with audible low pressure warning
- E. Transmission oil pressure gauge with audible low warning device
- F. Voltmeter
- G. Cab door ajar warning device
- H. Fuel level gauge
- I. Engine hour meter
- J. One Front and One Rear on the tractor air system pressure gauge with audible warning.
- K. One trailer air system pressure gauge with audible warning
- L. Turn signal indicator
- M. Body compartment door and cab door open light .
- N. Windshield wiper control, two speed and intermittent
- O. Running lights and headlight control with instrument lamp rheostat
- P. Spring parking brake release, with pilot light
- Q. Transmission shifter to be back lighted

- R. Battery "ON" indicator light
- S. Air filter gauge restriction gauge
- T. Heater/ defroster fan controls
- U. High beam headlight indicator- blue in color with column mounted control
- V. Rocker switches with, Two (2) master switches, one for emergency lights for fifteen rocker switches
 - 1. Ground light
 - 2. Scene lights
 - 3. Cross- fire
 - 4. Headlight wig-wag
 - 5. Bar light switches
 - 6. Three position strobe switch
 - 7. Spares
- W. All DOT required clearance lighting, and the entrance step lighting with automatic switch located on each entrance door into cab area.
- X. Outrigger extended indicator light
- Y. Amp meter

3.21 High Idle Switch

High Idle Switch for Electronic Engine: A momentary rocker switch shall be installed in the rocker switch panel to provide a pre-set 1200 RPM elevated engine speed. The high idle shall operate only with the parking brake on and the transmission selector in neutral.

3.22 Cab Master Controls

Cab controls shall include Master Battery Switch, Engine Start Switch, Shut Down Switch (Emergency) and Ignition Switch. Master Battery Switch placement shall be determined at the Pre-Construction Conference. An automatic thermal reset master circuit breaker for the alternator circuit shall be provided.

3.23 Dash Switches

All rocker type dash switches shall be non-load bearing and shall be clearly marked and back lighted. 10 extra rocker switches be supplied loose for replacements.

3.24 Total Manager System

A Class One Total System Manager System be installed. This device shall be equipped with a low voltage light and alarm with high idle activation. The load manager shall manage builder recommended loads to include the air conditioner and fan.

3.25 Cab Operator Indicator Lamps

The center of the instrument panel shall contain a cluster of indicator lamps informing the driver of the following:

RED LAMPS

Low air system one (1) or two (2)
Low engine oil pressure
High engine coolant temperature
High transmission temperature
Low coolant level (with option)
Air filter restriction
Low fuel level (activates at 1/4 full)
Stop engine
High or low voltage
Parking brake set
Cab Tilt not locked
Seat Belt Not Locked

GREEN LAMPS

Battery on Ignition on
Directional left and right indicators
Auxiliary braking device active
High idle active (with high idle option)

YELLOW

Check engine
Check transmission
ABS brakes
Wait to start
Engine maintenance

BLUE LAMP

High beam headlight on

AUDIBLE WARNING SYSTEM FOR THE FOLLOWING:

Low air system
Low engine oil pressure
High engine coolant temperature
High transmission temperature
Low coolant level
High and low voltage
Stop engine
Cab Tilt not locked
Seat Belt Not Locked

Thermal reset circuit breakers and relays shall be installed behind the electrical center cover.

3.26 Aerial Power Controls

There will be a ladder power and a PTO engagement switch located in the overhead switch console. A ladder PTO and a ladder hour meter will be furnished adjacent to the power switches. See ladder description for details.

3.27 Auxiliary Power Point

Two (2) 12 volt cigarette lighter type receptacles shall be provided in the cab dash on the officer's side.

3.28 Glove Box

The glove box shall be installed in the dash on the officers side. The glove box shall be 7.00"H x 13.75"W x 6.00" D with a hinged non-locking door.

3.29 Mobile Data Terminal/Laptop

A Mobile Data Terminal (MDT) or Laptop such as "**Panasonic Toughbook**" or equal shall be provided above the glove box on the officer side of the dash. The mounting area shall be the horizontal surface of the officer side dash. The mounting surface shall be a min. of 9.50"W x 18.75"L.

3.30 Cab Mobile Radio

Manufacture is to supply and install one (1) Dash mount w/ locking bracket, **Motorola XTL 5000 W7 W/ Smart Zone Programming Radio with Antenna** and **Motorola Speaker**. The radio should be mounted to be easily accessed by the Officer.

NO EXEPTIONS

For Technical and compatibility requirements contact Barry Katz @ Atlanta Communications 404-875-9316.

3.31 Personal Communication

There shall be a "FIRE COM" intercom system furnished in the chassis cab. The intercom system shall be installed and have all wiring and components to render the system operational as follows:

- One (1) Master station with two headset jacks in rear of cab.

- One (1) Isolated radio interface module for driver.

- One (1) Radio interface module for officer.

- One (1) Radio cord junction module.

- One (1) Headset mounted at pump panel with storage compartment for headset.

- Four (4) Headsets with over head mounting clip.

3.32 Cab Interior Lighting

Two (2) dome lights in the cab and two (2) in the crew cabin, each with an on/off switch. **Perco #300SP** or equal with red lens, connected to the cab door switch.

Two (2) dome lights in the cab, two (2) in the crew cabin, each with an on/ off switch. **Perco # 300sp** or equal with clear lens, switched on the dash.

3.33 Cab Ground Lighting

The cab shall be equipped with Trucklite brand #40044 under cab lighting. The sealed lights shall be located under the cab at each door. (See wiring instructions in 7.1.18)

3.34 Door Ajar Warning Light

The warning light shall indicate any cab or compartment doors are open. The light shall be mounted at the front of the cab's ceiling on its centerline. Light to be red flashing LED type and shall operate only when the parking brake is released.

3.35 Engine Tunnel Light

A Grote model #60181-5 rectangular 1.5" x 2.25" x 1.13" clear work light shall be provided and installed under the engine tunnel.

3.36 Hand Held Spotlight

An Optronics #KB-4003 hand-held spotlight with momentary switch shall be hard wired and installed in a bracket mounted on the top of the engine tunnel next to the officer.

3.37 Federal Electronic Siren

A Federal PA-4000 electronic siren shall be provided and installed in the center main rocker switch lower panel.

3.38 Cab Facia General

The front fascia shall be capable of being easily removed to provide access for servicing the windshield wiper motor and linkage, ember separator, headlamps, electrical bulkhead connectors, etc.

3.39 Windshield Wipers

Two (2), Two (2) speed electrically operated "wet arm" type wipers with two (2) motors and intermittent features. Spray washer required to have a readily accessible reservoir for

fluids. Access to wiper motors shall be through an access panel located on the front cab fascia.

3.40 Cab Factory Air-Conditioning and Ventilation

A ceiling mounted HVAC system shall be provided. The system shall consist of an overhead heater/defroster/air-conditioning unit mounted above the engine tunnel in a central location with dash mounted controls. The system has an engine mounted Seltec TM-21 Freon compressor. The system shall be capable of lowering the cab interior temperature from 100 degrees to 70 degrees within thirty minutes, with a relative humidity of 60 percent.

3.41 Cab Additional A/C

In addition to factory air conditioning, one (1) roof mounted air conditioner/ heater unit shall be installed, with a 57,000 BTU cooling capacity and a heating element rated at 20,000 BTU. The unit shall operate at a maximum of 1800 watts, 120 volt single phase load. The air conditioner unit shall operate from both shore power and generator power. A variable speed fan shall supply a minimum of 305 CFM air flow capacity. The Air conditioner shall be able to cool the cab from 100 degrees F to 70 degrees F in 30 minutes. Opening in roof shall be properly reinforced to support air conditioners and be supplied with a 1" rise to minimize moisture and condensation under the unit.

3.42 Cab Exterior Grab Rails

Four (4) 1-1/4" diameter x 28" long, anti slip stainless steel, grab rails will be provided, located one at each cab door entrance. Grab rail stanchions will be stainless steel and of an offset design, when necessary, to prevent "hand-pinching" when opening or closing the doors.

3.43 Cab Exterior Mirrors

Each forward cab door will have a 16" x 6-1/2", motorized, stainless steel, West Coast type mirror mounted on a swing-away, bow type, stainless steel bracket. Two (2) 4" x 6" wide angle, stainless steel, convex spot mirrors will also be provided and mounted one (1) on each main mirror bracket.

Each mirror will be individually remote controlled from the driver's position.

3.44 Cab Wheel Well Liners

Full width bolt in wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. The two-piece liners shall consist of an inner liner made of smooth aluminum and an outer fenderette 3.50" wide made of 14 gauge 304 polished stainless steel.

3.45 Air Intakes

Air Intakes shall be constructed of polished stainless steel grills. A stainless steel front grill, 39.88"W x 32"H, with a minimum free intake area of 488.8 sq. in. shall be installed on the cab front. Polished stainless steel side air vents, with 148" square inches of effective area shall be located on each side of the cab.

3.46 Cab Paint -Two Tone

The cab shall be painted two tone with a finished break line 1.5" below the cab side windows and down to the top of the grill on the cab front fascia.

All cab painting must be completed prior to the installation of glass accessories or any other cab trim to assure complete paint coverage and maximum corrosion protection. The entire cab must be disc ground to remove any surface oxidation or surface debris that may hinder the paint adhesion.

White paint shall be "2004 Ford Z1" and red paint shall be "2004 Ford F1" or equal. Paint shall warranted for seven (7) years against cracking, checking or peeling and loss of gloss caused by chalking or fading.

Cab underside and doors shall be rust proofed with a ten (10) year or 100,000 mile warranty certificate against perforation issued in the Fire Department's name.

3.47 Road Safety Kit

A road safety kit will be furnished with the following equipment:

- 1 - 2 1/2 lb. B-C fire extinguisher
- 3 - triangle safety reflectors
- 1 - wheel lug wrench

3.48 Apparatus Tracking Devise

A GPS vehicle tracking system and equipment to be installed by the manufacturer, that would allow real time location and monitoring via Internet services.

Section 4.0 Tractor Chassis

4.1 Chassis Warranty

The chassis manufacturer shall warrant to the original purchaser all components and workmanship of the chassis for a minimum of twelve (12) months, unless otherwise specified, with the exception of the actual chassis frame and cross members which shall carry a lifetime warranty. The warranty period shall begin on the date the vehicle is delivered to the original purchaser.

4.2 Frame Paint

The frame and the frame liner shall be painted black separately before assembly. The chassis shall be painted job color after assembly. Paint to be applied before air lines and electrical wiring is installed.

4.3 Rear Chassis Tow Eyes

There shall be two (2) tow eyes attached to the frame rails extending through the rear body panels, or dropped off the bottom and bolted directly to the chassis frame with grade "8" bolts.

4.4 Front Chassis Tow Hooks

There shall be two (2) tow eyes attached to the frame rails located beneath the extended front bumper and bolted directly to the chassis frame with grade "8" bolts. The tow eyes shall not decrease the angle of approach or departure.

4.7 Chassis Lubrication

All moving parts of the chassis shall be provided with pressure lubrication fittings and readily accessible for service.

4.6 Front Bumper

A one piece, polished stainless steel front bumper shall be provided. The bumper shall be a 12" high, two (2) rib wrap-around type.

The bumper shall be extended 16" ahead of the cab.

4.6.1 Front Bumper Apron

A 3/16" bright aluminum tread plate apron shall be installed between the bumper and the front face of the cab. Stainless steel bolts shall be used to attach the apron to the bumper flange.

4.6.2 Front Bumper Air Horns

Dual Grover Stuttertone 21" air horns shall be recessed in the front bumper, one (1) each on the left and right hand sides. A 3/8" airline "teed" equal distance from each horn shall be installed. Air horns actuation shall be accomplished by a dual lanyard cable, accessible to both the driver and officer.

4.6.3 One CPI Speaker

Two (2) Cast Products Inc. bright aluminum 100 watt speaker shall be recessed in the front bumper, on the officer's side. The speaker shall be bolted to bumper by means of a polished aluminum trim ring on the front face of the bumper.

4.6.4 10" Electric Mechanical Siren

Federal Q2B 10" electric siren shall be recessed in the left hand side of the front bumper. Only the motor will be recessed, with the front stator and grille protruding from the front face of bumper. Two chrome plated protective steel straps shall be installed vertically across the front of the siren grille. Siren shall be activated with foot switches for the officer and driver. A siren-brake switch shall be installed in the switch panel.

4.6.5 Electronic Siren

In addition to the mechanical siren, One (1) Federal EQ2B with a BP200 series "C" driver shall be installed.

4.7 Front Axle

The front axle shall be an Arvin Meritor MFS-20 with a 3.74" drop and a 71.00" KPI. It shall have a capacity of 20,000 lbs. GAWR.

4.7.1 Front Axle Cramp Angle

The hub piloted, MFS-20 model front axle cramp angle shall be a minimum of 45 degrees left and right when using the 385/65R 22.5 18 Ply front tires.

4.7.2 Front Wheel Bearings Oil Lubricated

The front axle wheel bearings shall be oil lubricated and come equipped with an oil level visual inspection window.

4.7.3 Front Shock Absorbers

Two (2) Monroe design, nitrogen gas charged shock absorbers shall be part of the front axle suspension.

4.7.4 Steering Column and Wheel

The Douglas Autotech steering column shall be a seven (7) position tilt and 2.25" telescopic type with an 18" steering wheel. The steering wheel shall be covered with black absorbite padding.

The steering column shall contain a horn button, self-canceling turn signal switch, four-way hazard switch and headlamp dimmer switch.

The hydraulic power assist steering gear shall be a TRW TAS-85. A Vickers hydraulic power steering pump shall be gear driven from the engine. The steering ratio shall be 23.3:1 and have 6.2 turns stop to stop.

4.8 Rear Axle

The rear axle shall be an Arvin Meritor model #RS-25-160 with single reduction gearing and shall have a fire service rated capacity of 31,000 lbs. GAWR.

4.8.1 Rear Suspension

Air ride type engineered to load requirements.

4.8.2 Lubricated Rear Wheel Bearings

The rear axle shall have oil lubricated wheel bearings.

4.8.3 Automatic Tire Chains

On-spot automatic tire chains shall be installed at the rear drive wheels. The chains shall be positioned by an air operated device and shall be activated by the rear wheels which shall spin the chain assembly under the moving tire to provide traction in snow and ice. The control shall be installed in the cab accessible to the driver. A lift up cover to prevent accidental activation shall be installed.

NO EXCEPTIONS

4.9 Gross Vehicle Weight Rating

The GVWR shall be (51,000) lbs. (20,000 front axle, 31,000 rear drive axle.)

4.10 Air Brake System

4.10.3 Front Axle Brakes

Front axle shall have **Meritor ADB-1560** disc-type brakes with 17" vented rotors and automatic slack adjusters.

4.10.2 Rear Drive Axle Brakes

The rear brakes shall be **Meritor Cam-Master** drum brakes with automatic slack adjusters with heavy duty – extreme service for emergency vehicles shoes installed. The rear axle spring brakes are to automatically apply in case of air pressure loss below 60 psi with a mechanical means for releasing the spring brake chambers.

4.10.3 ABS BRAKES

A **Rockwell/Wabco** anti-lock braking system with an acceleration slip resistance feature shall be installed. System design shall incorporate a dual redundant diagonal circuit electronically controlled through a sensor and tone ring on front and rear axle wheels. A dash mounted anti-lock lamp shall be installed to notify the driver of a system malfunction. A momentary test switch shall be installed to test the system for diagnostic codes.

4.10.4 Brake Air Compressor

The air compressor on the engine shall be a Wabco capable of producing a minimum of 18.7 cfm at 1250 engine rpm. It shall be gear driven, engine oil pressure lubricated and cooled by the engine cooling system. The air compressor shall have a 5-year warranty.

4.10.5 Front Air Chambers

Front air chambers shall be 30 square inches minimum.

4.10.6 Rear Air Chambers

Rear air chambers shall be 36 square inches minimum.

4.10.7 Spare Air Chamber

An additional 1200 cu.in. air reservoir shall be installed and isolated to prevent depletion of the air to the air brake system and to act as a supply tank for operating air equipment. It shall be plumbed with a 90 psi pressure protection valve on the reservoir supply side.

4.10.8 Total Air Chamber Capacity

A FMVSS 121 and NFPA rapid build-up, compliant air brake system shall be provided. It shall include three (3) air reservoirs with a total of 4136 cubic inches of air capacity.

4.10.9 Air Brake Check Valve

Bendix Westinghouse SR-1 valve in conjunction with a double check valve system to provide automatic spring brake application in case of air pressure dropping below 60 psi.

4.10.10 Compressor Air Line

The air line out of compressor shall be a minimum of 3 feet of copper tubing or stainless steel flex.

4.10.11 Air Brake Dryer

A Meritor Wabco system saver 1200 spin-on desiccant air dryer with a 12-volt, 100-watt automatic heated moisture ejector shall be installed in the air brake system.

The air dryer incorporates an internal turbo cutoff valve that closes the path between the air compressor and air dryer purge valve during the compressor "unload" cycle. The turbo cutoff valve allows purging of moisture and contaminants without the loss of turbo boost pressure.

The Meritor Wabco air dryer shall come with a 3-year or 300,000 mile warranty provided by Meritor Wabco Vehicle Control Systems.

4.10.12 Brake Treadle Valve

Bendix Westinghouse dual brake treadle valve for dual brake systems shall be installed.

4.10.13 Auxiliary Air Outlets

Two (2) auxiliary air outlet and one (1) quick release outside air intake male connector shall be provided in the left cab step area for shoreline air intake to maintain air system build up. The air connector supplied shall be compatible with a Milton 783, Parker Hannifin 2C or Meyers 54-401 connector.

(2) A quick release air discharge female connector shall be installed in the cab left step area for the use of auxiliary air tools. The air discharge connector shall be compatible with a Milton 787, Parker Hannifin B13 or Meyers 54-410 connector.

4.10.14 Manual Drains On Air Tanks

Manual drains shall be installed on all reservoirs of the air brake system.

4.10.15 Parking Brake Description

Anchorlock #30-36 spring brakes to be furnished on the rear axle. The spring brake shall also be used as a parking brake with the control valve and warning light dash-mounted. A mechanical means for releasing the spring brake shall be provided in the event of total air loss.

4.10.16 Parking Brake Control Valve

The control valve for the emergency parking brakes shall be installed in such a location that it can be easily reached by either the driver or officer while seated and belted and safeguarded against accidental activation.

4.11 Aluminum Wheels And Tires

4.11.1 Front Wheels

The front wheels shall be 9.00" x 22.5" Alcoa bright polished aluminum, with stainless steel hub covers and chrome lug nuts.

Note: hub covers shall have open centers so not to interfere with oil viewing windows as described in 4.7.2.

4.11.2 Front Tires

The front tires shall be Michelin 385/65R 22.5 20 ply "L" tubeless radial XZA1 highway tread with 22.5 x 9.00, ten (10) stud disc wheels. The tires and wheels shall be rated at 18,000 lbs.

4.11.3 Rear Tires

The rear tires shall be Michelin 315/80R 22.5 18 ply "H" tubeless radial XDN highway tread with 22.5 x 8.25, ten (10) stud disc wheels. Tires and wheels shall be rated at 27,000 lbs.

4.11.4 Rear Wheels

The single rear axle, enter and outer wheels shall be 8.25" x 22.5" Alcoa bright polished aluminum type, with stainless steel hub covers and chrome lug nuts.

4.11.5 Stainless Steel Wheel Trim Kits

The front and rear wheels shall have stainless steel lug nut covers. The front axles shall be covered with stainless steel baby moons with hole to view oil seal window. The rear axles shall be covered with foam mounted stainless steel high hats.

All stainless steel baby moons and high hats shall carry a lifetime warranty.

4.11.6 Spare Tires and Wheels

Awarded manufacturer shall supply one (1) ea spare tire and wheel for each size tire and wheel on the apparatus.

4.15 Mud Flaps

Monsato Rainguard or approved equal mud flaps shall be provided for all wheels.

4.16 Engine Type

A Cummins, Model ISM 500 or Detroit Series 60, 515 hp for emergency service, diesel, turbo-charged, with C-brake by Jacobs (Engine brake to act automatically when the accelerator pedal is released). The engine brake will be operated by dash mounted switches to include on/off and high/low operations. The "C" Brake shall disengage when the apparatus is shifted into aerial operation. **NO EXCEPTIONS**

The engine oil filters will be engine manufacturers branded or approved. The engine oil filters will be accessible and easily serviced or replaced. The engine will be installed in accordance with the engine manufacturer's instructions, and the chassis manufacturer will be able to furnish proof of engine installation approval by the engine manufacturer.

4.16.1 Engine Warranty

The engine must be covered by a five (5) year warranty. All components and accessories installed on the engine must be covered by the OEM warranty.

NO EXCEPTIONS

4.16.2 Engine General

The engine must be certified to be of correct size to handle automatic transmission of make and model bid upon. Engine, transmission, torque converter and drive train ratio must be correctly matched to prevent heat problems in the

engine or transmission and capable of providing the GVWR as specified. Road speed at full GVWR is to be set at 65 MPH.

4.16.3 Fast Idle Governor

Engine Fast Idle Governor activates only through the Neutral Safety Switch and after the Parking Brake is activated. One control switch to be mounted in cab in easy access of the driver and a second switch mounted in the right front of the body. Governor must control engine RPM as specified by the apparatus manufacturer to assure maximum capacity of the electrical system.

4.16.4 Engine Air Cleaner

Heavy duty air cleaner, replaceable extra heavy duty cartridge **Donaldson** horizontal 16" diameter with **PVH00-0886 pre-cleaner** and dust evacuator, or acceptable equal. Vertical snorkel to top of cab with pipe braced to frame. Hood to be a **Donaldson GAH00-0607**. Restriction indicator to be a **Donaldson RAX00-2101**.

4.16.5 Engine Oil Filter

Standard heavy duty oil filters full flow spin on type, oil filter. Thermos bottle stopper type dipstick is desired.

4.16.6 Engine Warning System

Engine/Transmission guard system for engine Low Oil Pressure, High Water Temperature or coolant loss and Transmission High Temperature shutdown wired into engine warning system. Warning alarm to be both audible and warning light, warning light labeled "Oil, Water Alarm". The alarm is to be activated when the engine guard is activated.

4.16.9 Engine Exhaust Description

The aluminized exhaust system will be installed in accordance with the engine manufacturer's requirements and meet all Environmental Protection Agency and State noise level requirements. Exhaust system components will be securely mounted and easily removable.

The exhaust will discharge on the right side of the apparatus forward of the rear axle. An angled, chrome plated, exhaust deflector will be installed on the exhaust outlet.

4.17 Transmission Description

The transmission shall be an Allison 4000 EVS five (5) speed automatic with electronic controls for Fire Service vocation. The transmission shall have two (2) 10-bolt PTO pads. **NO EXCEPTIONS**

Transmission installation will be in accordance with the transmission manufacturer's specification. The transmission will be readily and easily removable for repairs or replacement.

The transmission shall be equipped with a Allison approved, oil transmission cooler located below the radiator allowing a single depth core and efficient cooling package. The transmission cooler shall be mounted in a manner to allow maximum approach angle by not protruding below the frame more than an inch. The transmission shall have two (2) internal oil filters.

NO EXCEPTIONS

4.17.1 Synthetic Transmission Fluid

Castrol "Transynd" or an equivalent synthetic TES 295 transmission fluid shall be utilized to fill the EVS transmission.

4.17.2 Transmission Touch Pad

An Allison pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and reach.

4.17.3 Transmission Mode

The transmission, upon start-up, will select five (5) speed operation. By pressing the "mode" switch on the shift pad (mode on) provides five speed overdrive.

4.17.4 Transmission Warranty

The Allison 4000 EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty. **NO EXCEPTIONS**

4.17.7 Transmission Driveline Performance

The apparatus shall be geared such that it may attain a speed of 65 mph minimum on a flat dry road surface, and maintain a true speed of 45 mph on any grade up to and including 6%. The completed apparatus shall comply with or exceed all requirements of **NFPA 2003 2-9 (current edition) "Apparatus Performance."**

4.17.6 Top Speed

The top speed of the vehicle shall be approximately 65 mph at governed engine rpm.

4.18 Drive Line

The drive line shall be dynamically balanced tubular shaft with a minimum of **Spicer 1810** with glide coat splines on all slip shafts.

4.19 Cooling System General

The cooling system shall be de-signed to meet or exceed the engine and transmission manufacturer and EPA requirements.

4.19.1 Radiator Drains

Cock type drains shall be provided at lowest points in the system.

4.19.2 Radiator Hoses and Clamps

All cooling system and heater hoses, including engine hoses, shall be silicone premium green stripe, with constant torque clamps.

4.19.4 Coolant

The cooling package shall have extended life coolant installed. The use of coolant additives will not be allowed, as this is part of the extended life coolant makeup. Engines equipped with coolant filters will be supplied without coolant additives. Water conditioner shall be **Nal-Cool 3000**.

4.19.4 Low Coolant Alarm

A Low Engine Coolant indicator light located in the warning lamp center in the instrument panel shall be provided. In addition, an audible tone alarm shall be provided to warn of a Low Coolant Condition.

4.19.5 Cooling System Fan

The engine cooling system shall incorporate a thermostatically controlled, clutched fan.

When the clutched fan is disengaged it shall facilitate improved vehicle performance, cab heating in cold climates, and fuel economy.

The fan will automatically lock up when the vehicle is placed in pumping mode.

The fan shall be installed on the engine and includes a shroud. Recirculation shields shall be installed to insure that air, which has passed through the radiator, is not drawn through it again.

4.20 Fuel Tank

A 60 gallon minimum fuel tank shall be installed.

4.20.1 Fuel Tank Fill Inlets

A two (2) inch diameter fill inlet shall be located on the driver and passenger side of the body. A Cast Products heavy duty cast aluminum spring loaded hinged fill door, marked "Diesel Fuel Only". The fuel fills will not interfere with air bottle compartment doors. Steel wire braided reinforced supply and return hoses with reusable fittings shall be installed for tank to engine lines.

4.20.2 Fuel Tank Drain Plugs

A ½" inch NPT drain plug shall be provided in the center of the fuel tank

4.20.3 Fuel Tank Filters

The secondary filter shall be a manufacturer approved standard dual spin-on filters, "Coalescer" type.

4.20.4 Fuel Primer Pump

A **Facet #40109** electric fuel primer pump shall be installed on a frame cross member and have a fuel primer momentary switch located on the instrument panel to activate the primer pump. A check valve and by-pass hose shall be installed for normal draw of fuel from the engine fuel pump.

4.20.5 Fuel Shut Off Valve

A fuel shut off valve shall be installed in the fuel draw line at the inlet side of the fuel filter to shut-off fuel supply to the engine in the event that a normal shutdown does not occur.

4.21 Chassis Electrical General

A single starting system shall be installed per NFPA 2003. The electrical system shall be 12 volt, suppressed per SAE J551 with six (6) premium 950 CCA batteries and 210 minute reserve capacity and 3/0 welding type dual path starter cables per SAE J541/ Group 31.

All electrical wiring in the chassis will be SXL cross link insulated type. Wiring is to be color coded and include function codes every three (3) inches on both sides. Wiring harnesses will be routed in protective, heat resistant loom, securely and neatly installed. Two (2) power distribution centers will be provided in central locations for greater accessibility. The power distribution centers contain automatic thermal self resetting breakers, power control relays, flashers, diode modules, daytime driving light module, and engine and transmission data links. All breakers and relays are utilized in circuits which amp loads are substantially lower than the respective component rating thus ensuring long component life. Power distribution centers will be composed of a system of interlocking plastic modules for ease in custom construction. The power distribution centers are function oriented. The first is to control major truck function and the second controls overhead switching and interior operations. Each module is single function coded and labeled to aid in troubleshooting. The centers also have accessory breakers and relays for future installations. All harnesses and power distribution centers will be electrically tested prior to installation to ensure the highest system reliability.

All external harness interfaces will be of a triple seal type connection to ensure a proper connection. The cab/chassis and the chassis/body connection points will be mounted in accessible locations. Complete chassis wiring schematics will be supplied with the apparatus.

The starting system shall be supplied with the following:

- One (1) Cole-Hersee #2484 master battery switch
- One (1) Cole-Hersee #EX26654A ignition switch
- One (1) starter button
- One green LED indicator for battery "on".
- One green LED indicator for ignition "on".

4.21.1 Alternator

The alternator shall be a Leece Neville Model 4890JB, 320 amp, 12 volt (minimum). Alternator shall be equipped with an externally adjustable regulator. The alternator shall have a positive threaded type belt tensioning adjustment. A slotted arm type will not be accepted.

The alternator must be capable of delivering at least 60% of its rated capacity at idle speed. A performance scan sheet shall be provided with bid with stationary idle speed and travel.

4.21.2 Battery Description

Six (6) 12 volt 950 CCA (cold cranking amps) (minimum) high cycle batteries shall be installed. Batteries shall be recommended for diesel engines. Battery cables and clamps shall have a lifetime warranty against heat, cold, chemicals and

corrosion-such as **Belden**. The starter shall be capable of rotating the engine at starting speed for not less than two (2) minutes with fully charged batteries.

4.21.3 Battery Jumper Studs

Battery jumper studs shall be provided in the driver's step area. The studs allow the vehicle to be jump started or cab to be raised in an emergency due to battery failure.

4.21.4 Kussmaul Battery Conditioner/Air Compressor

A Kussmaul Pump Plus #091-9-1200 air compressor/battery conditioner shall be supplied.

The battery conditioner shall be mounted in the cab behind the driver's seat.

The air compressor shall be installed behind the driver's seat. The air compressor shall be plumbed to the air brake system to maintain air pressure.

The battery conditioner shall have a switch for selection of operation voltage source. When in the AC position it shall operate only from shoreline.

A Kussmaul 20 amp auto-eject receptacle, with weatherproof cover and box, shall be located on the left side of the cab ahead of the driver's door. The receptacle shall automatically eject the plug when the starter button is depressed.

A bar graph indicator shall be provided and installed on the driver's side of the cab indicating the charge level of the batteries.

NO EXCEPTIONS

4.21.5 110-Volt Shoreline Connection - "SUPER" Auto Eject

One (1) Kussmaul "Super" Auto Eject model 091-55-20-120, automatic, 110-volt, 20 amp shoreline disconnect will be provided for the on board, 110 volt battery charging systems and auxiliary A/C unit on cab. The disconnect will be equipped with a NEMA #5-20P male receptacle, which will automatically eject the shoreline when the vehicle starter is energized. The connection will be equipped with a weatherproof cover and will be located in the area directly adjacent to the driver's side cab door. A label will be provided indicating voltage and amperage ratings.

4.21.6 Backup alarm

An ECCO #575 backup alarm shall be installed at the rear of the chassis. The alarm will automatically activate when the transmission is placed in reverse.

4.21.7 Aerial Electrical Junction Compartment

An electric junction compartment will be provided near the trailer gooseneck section. This compartment will be recessed through the rear wall of the body to provide an easily accessible enclosure to house all of the aerial device wiring junction points, terminal strips, solenoids, etc. All wiring for the **aerial device** including outrigger, diverter valve, and swivel circuits will be enclosed in this compartment. The design of this compartment will not decrease the storage capacity area of the body in which it is located.

4.22 Locker Compartment

A locker compartment will be provided, one (1) each side to the rear of the tractor cab, measuring 30.5" wide x 50" high x 24" deep with a door opening of 26" wide x 47" high. The compartment will be mounted to the chassis frame rails at the front and rear of the compartment. Each compartment will be equipped with an access panel located on the rear wall to provide access to the area behind the locker compartment.

Two (2) turntable access step, one on each side, will be provided at the rear of the tractor locker compartment. The steps will provide unobstructed access or egress to and from the aerial device turntable for safety of fire fighting personnel. The area between the lockers will provide a location for the hydraulic tank, optional generator and various hydraulic component.

Section 5.0 Trailer Body and Chassis

5.1 FLEX JOINTS

Due to the trailer flexing associated with tractor drawn aerial bodies, the tiller body will be segregated into a minimum of three (3) separate module. Each module will be spaced apart by a 1" flex joint to allow movement between each body module when the vehicle is in road travel or aerial operations.

5.2 Body Trim

The body will be protected and covered with bright finished polished aluminum tread plate. The tread plate will be fastened with stainless steel hardware and will be coated with rubber type undercoating between the body panel and tread plate to protect from moisture. All edges will be sealed with silver, rubber caulking.

Polished aluminum tread plate will be provided at the following areas:

- All surfaces over the compartments or on top of body that will be necessary for personnel to walk or mount equipment
- Entire rear of body
- Entire front of body
- Below aerial turntable decking
- Cover over hydraulic tank

5.3 Compartment Ventilation

All exterior compartments shall be provided with ventilation units in the back wall of the compartment. The approximate size shall be six (6) inches square. These units must prevent the entry of dirt and moisture

5.4 Compartment Flooring

Equipment compartment floors and shelves shall be fitted with **Dura-dek**.

5.5 Roll-Up Compartment Doors

All compartments (unless otherwise specified) shall be equipped with **Robinson Series II** shutter exterior compartment doors. The doors shall be of the locking type and all keyed alike. This includes all rollup doors both inside and out.

5.5.1 Compartment Door Finish

The doors shall be constructed of box frame type satin finish anodized aluminum slats. The slats exterior surface is flat, while the rear surface is designed to prevent loose equipment from jamming the door.

5.5.2 Door Ajar Warning Devise

A magnetic door ajar switch system shall be provided built-in to striker blocks and end caps of lift bars. Refer to 3.33 Door Ajar Warning System.

5.6 Wheel Well Liner And Fenderettes

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum to prevent corrosion.

The rear wheel wells shall be radius cut for a streamlined appearance. A polished stainless steel ¼ rounded fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners.

5.7 Apparatus Compartments

The aluminum tread plate tops on each side of the body shall be extended out and downwards a minimum of .50" over the compartment doors forming a drip rail. Corners shall be TIG welded.

5.8 Adjustable Shelves

Adjustable shelves as indicated on numbered compartment list shall be fabricated from **3/16 aluminum 3003H-14 alloy smooth plate**. Shelves shall have two (2), 2" vertical flange along the front and rear edges. The shelves shall be designed to be used with the flanges in the upward position to hold, various equipment on the shelf, or in the downward position for a lip free shelf surface. All shelves shall be fully adjustable, from top to bottom of the compartment.

5.9 Slide Out Equipment Trays (300lbs)

Sliding tool trays shall be provided per compartment list. Capacity ratings are in the extended position. Trays shall be fabricated of **3/16" aluminum 3003H-14 alloy smooth plate** with double flange at outer edge. The tray edges shall be broken with a minimum 3" flange on each side, and welded on corners to form a box type tray surface. Automatic locks shall be provided for both the "in and out" positions. The release mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand. Trays shall be attached to the chassis frame for load transfer and to reduce stress on the body. The trays shall slide fully out of the compartment. Sliding tracks shall be manufactured by **Grant 3300 series** as per compartment list. Slides shall be constructed of formed steel with ball bearings mounted in triple track rails.

5.10 Slide Out Equipment Trays (1000 Lbs.)

Slide- out equipment trays, as indicated on numbered compartment list, shall be fabricated from **3/16" aluminum 3003H-14 alloy smooth plate**. The trays shall be built with a 3" vertical lip, with welded corners, to form a box type tray surface.

The tray shall be pin locked in the compartment as well as at 50% and 100% of extension for loading or as a stationary work surface. The tray shall extend 100% out of either side of the body.

5.11 SLIDE-OUT DROP-DOWN EQUIPMENT TRAY (300 Lbs.)

Slide-out drop-down equipment trays, as indicated on numbered compartment list, shall be fabricated from **3/16" aluminum 3003H-14 alloy smooth plate**. Trays shall be built with a 3" vertical lip, with welded corners, to form a box type tray surface.

Sliding tracks shall provide a 30 degree tilt out of compartment and have a capacity of 300lbs. Slides shall be manufactured of heavy duty structural steel with sealed ball bearing rollers.

Sliding track shall allow tray to extend approximately 80% out of compartment.

A
spring-type locking device shall be used for securing tray "in" compartment.

5.12 Air Bottle Compartments

5.12.1 Drivers Side

SCBA storage compartment shall be provided and located in the driver side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect finish of the air cylinder.

5.12.2 Passenger Side

SCBA storage compartment shall be provided and located in the passenger side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect paint finish of the air cylinder.

5.12.3 SCBA Compartment With O-Ring Gasket

All SCBA compartments mounted in the wheel well area shall have an o-ring gasket with push button latch assembly.

5.13 Side And Rear Overlays

Overlay panels shall be constructed of polished aluminum tread plate. Polished aluminum overlay shall be provided and installed in the following areas:

- The front face of each side compartment.
- The rear body face and vertical area above tailboard and below hose bed.
- Drivers side and passenger compartment top extending down over side to the compartment doors then forming a drip rail above doors.
- Front face of hose bed above booster tank.

Overlay shall be installed with "Aluminized" stainless steel bolts to prevent corrosion.

5.14 Slip-Resistant Walkway Surface

All exterior surfaces designated as stepping, standing, and walking areas shall have Bustin Tread Plate aluminum slip-resistant overlay material installed. Open design where applicable, if not drain holes should be installed to allow water shed.

5.15 Hydraulic Driven Generator

The generator system will be an Onan model CMHG 10000 GenSet, **NO EXCEPTIONS**

The Onan display will be by FRC and will display Hz, voltage, amperage, oil temperature and hours.

Apparatus manufacturer shall honor the Onan warranty, for five (5) years.

A hot shift PTO will be provided on the transmission for the Onan generator. The PTO will be controlled from the cab, which will include a PTO engagement switch and a PTO engaged indicator light.

The generator will be located as determined by engineering and the fire department.

The generator shall be located as close as possible to the main breaker panel

5.16 Load Center

The generator output line conductors will be wired from the generator output connections to a breaker panel. The breaker panel will be equipped with a properly sized main breaker using two (2) of the twelve (12) spaces which leaves a total of ten (10) available spaces.

The generator output conductors will be sized to 115% of the main breaker rating and shall be installed as indicated in the wiring section.

Ten (10) appropriately sized, 120 volt, circuit breakers will be provided.

The breaker panel will be located in an enclosed compartment to be determined at the pre-build conference.

5.17 Tiller Trailer Frame

The trailer frame will be of welded steel construction and gooseneck design. The trailer wheelbase will be approximately 330".

5.18 Trailer Steering Axle

The trailer axle will be a Rockwell FL-941 steering axle with 22,000 lb. capacity. The axle will be supplied with premium oil seals.

5.19 Trailer Axle Brakes

Rockwell 17" disk brakes will be provided for the trailer steering axle. Automatic slack adjusters are provided as standard equipment. The trailer brakes will be plumbed to the tractor parking brake control in the tractor cab within easy reach of the tractor driver's seating position. An on indicator light will be installed in the tractor cab dash adjacent to the control.

The trailer air brake system will be equipped with two (2) air tanks with the capacity of 3,566 cu. in.

5.20 Trailer Suspension

The trailer suspension will be a Ridewell Model RAS-227 air ride suspension system. The suspension will have a capacity at ground equal to that of the trailer steer axle.

Monroe Heavyduty shock absorbers will be installed on the trailer suspension.

5.21 Trailer Wheels

The trailer wheels will be 22.50 x 12.25", hub piloted polished aluminum disc. The wheels will have an 11-1/2" diameter bolt circle with ten (10) holes.

Chrome plated hub and nut covers will be provided on each trailer wheel.

Stemco premium oil seals with viewer glass will be provided on the trailer steering axle.

5.22 Trailer Tires

The trailer tires will be 425/65R 22.5 tubeless radial, 23,000 lb. capacity at 115 psi and 65 MPH.

5.23 Trailer Steering

The trailer steering gear will be Ross TAS 70 integral power steering gear box. The hydraulic power steering pump will be a Parker type.

Steering wheel will be vinyl padded, minimum 18" diameter. Steering column will have tilting and telescoping capabilities.

5.24 Fifth Wheel

The fifth wheel will be a monorace bearing, 3.38 x 40.8 diameter, with the mounting plate bolted to the chassis. The longitudinal pivot point mounting will utilize two (2) 2-3/4" diameter steel pins. Grease fittings will be provided in two (2) locations on the bearing.

Both upper and lower surfaces mated to the bearing will be milled to provide a true bearing plate.

5.25 Tractor Lock-Out System

To reduce flexing between the tractor and trailer during aerial operation, a trailer lock-out system will be provided.

5.26 Tillerman Cab

A permanently mounted tiller cab will be provided on top of the trailer, rear of the aerial ladder. The maximum overall height of the tiller cab will not exceed 135". The minimum width of the cab will be 42" to provide adequate room and improve visibility for the tiller driver.

The floor of the cab will be aluminum tread plate with the forward area angled upward to provide maximum footing leverage for the tillerman.

5.26.1 Cab Interior

The floor of the driver's compartment and the floor of the crew area will be covered with aluminum treadplate.

The dash and headliner will be padded and upholstered to reduce noise level.

The interior of the cab will be painted to match the color of the fire body.

5.26.2 Instrument and Control Panel

A switch panel will be installed in the tillerman cab. The switch panel will be provided with illuminated rocker switches to enable the tillerman to turn on/off the under body lights, the step lights and any other specified light.

A safety start system will be provided between the tractor cab and the tiller cab. A momentary contact starter button, which must be depressed in conjunction with the start button in the tractor cab, will be located in the steering wheel hub.

Left and right, amber, turn signal indicator lights will be mounted on the tiller cab dash to alert the tillerman of the driver's intent.

A buzzer warning system will be provided between the tractor and tiller cabs. Two (2) weatherproof footswitches switches will be provided, one (1) push button in the tractor cab and one (1) foot switch in the tiller cab. The buzzer controls will be labeled: 1-Stop, 2-Go, 3-Backup.

One (1) red/clear dome light with on/off switch on light, will be provided on the center of the tiller cab ceiling.

A vinyl covered, padded sun visor will be provided for the front windshield. The visor will be double hinged for a wider range of sun screening.

A warning label will be installed stating the following:

"Occupant must be seated and belted when apparatus is in motion."

All electrical components will be wired into a central electrical panel, which will be located under the front toe plate of the tiller cab. The electrical harnesses from the overhead and tractor will be wired to the distribution panel, all connections will be made with water proof connectors.

5.26.3 Communication System

A Firecom intercom system will be provided between the tractor cab and the tiller cab. The master station will be located in the tractor cab. It will be equipped with controls for speaking and listening, volume and a "Push to Talk" button. Two (2) plug in modules will be provided in the tiller cab, one (1) each side of the control panel.

5.26.4 Tillerman Seat

The tillerman's seat will be a high back Seats Inc. 911 "Universal", 6-way electric "ABTS" seat. The seat will have a tapered, padded seat cushion with mechanical suspension.

A red integrated 3-point shoulder harness with lap belt will be provided as standard equipment.

5.26.5 Tiller Cab Windshield Defogger System

A 12 volt powered windshield defogger system will be provided on the right side of the tiller cab dash. The system will include a power blower and adjustable defogger vent below the windshield on the right side. The controls for the blower will be located in the overhead switch console.

5.26.6 Tiller Cab HVAC Unit

An 17,000 btu combination heat and air conditioner shall be provided and mounted to the rear tiller cab wall with controls within easy reach of the tiller operator. The air conditioning system will operate from the PTO hydraulic generator.

5.26.7 Step Lights

Two (2) chrome plate step lights will be provided on the front corners of the tiller cab, forward of the cab doors, one (1) each side. The step lights will be activated with the vehicle marker lights.

5.26.8 Tiller Cab Windows (No Post Vision)

The front windshield of the tiller cab will be a 740 sq. in. flat, single piece of tinted automotive industry approved safety glass. The front windshield will be designed with a "No Post Vision" seamless joint between the front and side viewing windows, requiring no corner post which will obstruct the visibility of the driver.

Two (2) rear viewing corner windows will be provided in each rear corner of the tiller cab. The rear corner windows will provide a clear view for the tiller driver when looking over his shoulder at the rear corners of the tiller body. The rear corner windows will be designed with a "No Post Vision" seamless joint between the rear and side viewing windows, requiring no corner post which will obstruct the visibility of the driver.

One (1) horizontally split sliding rear window assembly will be provided on the back of the tiller cab.

5.26.9 Windshield Wiper and Washer

A single, electric operated, pantographic type windshield wiper will be provided on the front center of the tiller cab. The wiper will have "HI/LO" and "INTERMITTENT" operating speeds. "HI/LO" speeds will be controlled by an overhead mounted rocker switch. "INTERMITTENT" operation will be controlled by an overhead mounted "paddle/lever" switch. The wiper will be of the self-parking type.

Windshield washers will be electric operated wet-arm type with a 3/4 gallon washer fluid reservoir, readily accessible in the tiller cab, under the toe plate. The washer control is integral with the intermittent wiper control switch.

There will be a removable panel on the front face of the cab for access to the wiper motor assembly. NO EXCEPTION!

5.26.10 Air Vents

Two (2) Salem series, two-way, hingeless air vents will be provided on the front of the tiller cab, one (1) each side. The vents will be flush mounted below the windshield and painted to match the color of the tiller cab.

5.26.11 Grab Rails

Two (2) 1-1/4" diameter x full height, polished aluminum, grab rails will be provided, located one (1) at each tiller cab door entrance. Grab rail stanchions will be chrome plated and of an offset design, when necessary, to prevent "hand-pinching" when opening or closing the doors. Formed rubber gaskets will be provided between each stanchion base and the cab surface.

5.26.12 Tiller Cab Mirrors

Two (2) 4" x 8" rectangular convex mirrors will be provided and mounted on the inside of the cab.

5.26.13 Tiller Cab Doors

The tiller cab will be equipped with sliding doors for access to the cab. The tiller cab door opening will be a minimum of 34" W x 44.5" H. The slides for the doors will be a heavy duty ball bearing design.

The tiller cab doors will have drop down (horizontally) sliding type windows to provide greater ventilation of the tiller cab. The doors will be capable of being latched in the open and closed positions.

The tiller cab doors will be wired to the open door beacon light in the ceiling of the tractor cab with an override switch for training.

5.27 Compartments

The Aerial body is design to provide the maximum amount of compartment space possible, yielding 27" deep lower compartments and 14" high air pack type compartments. This is a critical feature when trying to store PPV fans, saw boxes, etc in body compartments.

5.27.1 Locker Compartment

A locker compartment will be provided, one (1) each side to the rear of the tractor cab, measuring 30.5" wide x 50" high x 24" deep with a door opening of 26" wide x 47" high. The compartment will be mounted to the chassis frame rails at the front and rear of the compartment. Each compartment will be equipped with an access panel located on the rear wall to provided access to the area behind the locker compartment.

Two (2) turntable access step, one on each side, will be provided at the rear of the tractor locker compartment. The steps will provide unobstructed access or egress to and from the aerial device turntable for safety of fire fighting personnel. The area between the lockers will provide a location for the hydraulic tank, optional generator and various hydraulic component.

5.27.2 Left Side Compartmention

- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 26" Wide x 47" High x 25" Deep, with a door opening of 22" Wide x 42" High.
- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 40" Wide x 59.75" High x 28" deep, this compartment will be transverse in the lower 15" and the upper 28.5" of the compartment, with a door opening of 36" Wide x 53" High.
- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 40" Wide x 59.75/28.25" High x 28/13.50" deep, this compartment will be transverse in the lower 15" and the upper 28.5" of the compartment, with a door opening of 36" Wide x 53" High.
- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 40" Wide x 59.75/28.25" High x 28/13.50" deep, with a door opening of 36" Wide x 53" High.

- One (1) roll-up door, runningboard compartment forward of the trailer axle measuring 40" Wide x 59.75/28.25" High x 28/13.50" deep, with a door opening of 36" Wide x 53" High.
- One (1) roll-up door, runningboard compartment forward of the trailer axle measuring 23" Wide x 31/28.50" High x 28/13.50" deep, with a door opening of 19" Wide x 24.88" High.
- One (1) roll-up door, runningboard compartment to the rear of the trailer axle measuring 37" Wide x 31/28.50" High x 28/13.50" deep, with a door opening of 33" Wide x 24.88" High.

5.27.3 Right Side Compartmentation

- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 26" Wide x 47" High x 25" Deep, with a door opening of 22" Wide x 42" High.
- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 40" Wide x 59.75" High x 28" deep, this compartment will be transverse in the lower 15" and the upper 28.5" of the compartment, with a door opening of 36" Wide x 53" High.
- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 40" Wide x 59.75/28.25" High x 28/13.50" deep, this compartment will be transverse in the lower 15" and the upper 28.5" of the compartment, with a door opening of 36" Wide x 53" High.
- One (1) roll-up door, full height compartment to the rear of the outrigger measuring 40" Wide x 59.75/28.25" High x 28/13.50" deep, with a door opening of 36" Wide x 53" High.
- One (1) roll-up door, runningboard compartment forward of the trailer axle measuring 40" Wide x 59.75/28.25" High x 28/13.50" deep, with a door opening of 36" Wide x 53" High.
- One (1) roll-up door, runningboard compartment forward of the trailer axle measuring 23" Wide x 31/28.50" High x 28/13.50" deep, with a door opening of 19" Wide x 24.88" High.
- One (1) roll-up door, runningboard compartment to the rear of the trailer axle measuring 37" Wide x 31/28.50" High x 28/13.50" deep, with a door opening of 33" Wide x 24.88" High.

- One (1) roll-up door, runningboard compartment to the rear of the trailer axle measuring 47" Wide x 31/28.50" High x 28/13.50" deep, with a door opening of 43" Wide x 24.88" High.

5.27.4 Rear Compartment

A horizontally hinged drop down door, compartment will be provided at the center rear of the trailer measuring 34" Wide x 9" High x 24" Deep, with a door opening of 34" Wide x 9" High.

5.28 Pike Pole Storage Area

Six (6) pike tubes will be provided. They will be individual tube type holders, mounted in the ladder storage area (if space allows). Each holder will be equipped with a spring type holder and will be accessible from the rear of the apparatus. Each pike pole holder will be labeled to indicated the tube length.

5.29 Pike Poles

Six (6) pike poles will be provided in the following configuration:

- 2 - Six (6) foot pike poles with fiberglass handles
- 2 - Eight (8) foot pike poles with fiberglass handles
- 1 - Ten (10) foot pike pole with fiberglass handles
- 1 - Twelve (12) foot pike poles with fiberglass handles

5.30 Ground Ladder Storage Area

All ground ladders (except as noted) will be stored horizontally in the center rear of the aerial body. The ladders in the center of the body will supported by adjustable 2" X 2" X 1/4" nylon ladder slides. The ladders stored in the center of the body will be fully enclosed.

A horizontally hinged, beveled aluminum tread plate door will be provided for the entire bank of ladders at the rear of the trailer. The doors will be constructed from 3/16" aluminum tread plate with a 3/16" full length stainless steel hinge. Two (2) Eberhard gas shock door holders will be provided on each door. The doors will latch with an Eberhard #206 "D" ring handle.

5.31 Ladders

The following Duo-Safety or equal ground ladder compliment will be provided:

- 2 – Duo-Safety 35' two (2) Section 1200A-35
- 1 - Duo-Safety 28' two (2) Section 900A-28

- 1 - Duo-Safety 24' two (2) Section 900A-24
- 1 - Duo-Safety 20' Roof with Hooks 875A-20
- 1 - Duo-Safety 16' Roof with Hooks 875A-16
- 1 - Duo-Safety 16' Roof with Hooks 875A-16
- 1 - Duo-Safety 12' Folding 585A-12
- 1 - Duo-Safety 14' Attic 701-14
- 1 - Little Giant Ladder for Fire service

Section 6.0 Aerial Operation and Outriggers

6.1 Intent Of Aerial Specifications

The intent of these specifications is to describe a telescoping elevating ladder. It will consist of the true ladder type. It will consist of; four (4) ladder sections; pre-piped telescoping waterway; a steel turntable; torque box and four outriggers. The height of the unit will be 100' and the horizontal reach will be 94'.

The aerial and all components must meet all NFPA and UL requirements.

6.2 Design Standards

The design criteria of the unit will be to create a structure and system that emphasizes safety, product reliability, and ease of operation. These criteria will be:

1. All welds in the aerial device will be designed per the static and fatigue criteria of the American Welding Society No. D1.1-97. All aluminum welds will be designed per the static and fatigue criteria of the American Welding Society Standard No. D1.2-97.
2. Ladder deflections - The ladder will not deflect downward more than nine (9) inches with a rated tip load when the ladder is fully extended at 0 degrees elevation.
3. The aerial device will be capable of operating with a rated tip load in either of two of the following conditions:
 - a. Conditions of high wind up to 40 mph
 - b. Conditions of icing, up to a coating of .25" over the entire aerial structure.

6.3 Height And Reach

The height of the unit will be a minimum of 100' as measured by NFPA-1901 requirements.

The horizontal reach of the unit will be a minimum of 94' as measured by NFPA-1901 requirements.

6.4 Aerial Hydraulic System

The hydraulic system will provide power to the entire aerial device as efficient as possible without the use of a hydraulic cooler.

A pressure compensated hydraulic axial piston pump will be provided which will be capable of operating under any rated ladder tip load condition and aerial device position at normal engine idle or governor controlled fast idle. The hydraulic pump will be capable of generating sufficient flows to allow multiple aerial functions without significant loss of speed.

A hydraulic system relief valve as well as individual circuit relief valves will be provided to prevent damage to any function or circuit. The relief valve will have a stain-less steel relief spring to ensure proper function and product reliability.

6.4.1 Hydraulic Oil Reservoir

A hydraulic oil reservoir will be provided to supply the needs of the hydraulic system. A 2" gated suction line will be provided between the oil reservoir and the hydraulic pump. The tank fill will be provided with a strainer screen and vent cap. Located near the fill cap will be a dip-stick for checking fluid levels. Suction and return ports are designed to SAE Straight Thread O-ring Specifications. These ports incorporate an o-ring seal rather than pipe threads.

6.4.2. Hydraulic Hose, Tubing And Fittings

All hydraulic steel tubing, hydraulic rubber covered wire braided hoses, and hydraulic fittings/adapters will have a minimum burst pressure rating of four times the operating pressure. Hoses and tubing will be properly sized to minimize heat build up during extended periods of operation. Hoses and tubing will be properly sized to minimize flow restrictions.

All hydraulic hose will have a tube and cover constructed of Nitrile elastomers and will have a braided/spiral wire reinforcement capable of maintaining a 4:1 safety factor in all areas of the hydraulic system. The hose will meet the appropriate SAE performance specifications: 100R2 or 100R12.

The manufacturer will implement the most efficient, leak-free, fluid connector design in the industry.

The connector system should be designed to incorporate the following design upgrades.

1. All hydraulic ports (manifolds, pumps, tank, etc.) to be elastomeric sealing technology;
 - A. No pipe threads in the hydraulic system
 - B. Sealing is done by O-rings with the mechanical holding power of straight threads.
2. All tube and hose connections to Parker Seal-Lok, O-ring face seal technology or equal.
3. Sealing is done by o-ring with the mechanical holding power of straight thread.
4. Fittings are rated up to 6000 psi.
5. Drop-in design of Seal-Lok connectors allows for easier maintenance and assembly.
6. Fitting resist 200% over torque, with optimum vibration resistance.
7. Shaped fittings are machined from forged bodies for compact design and strength.
8. Fittings meet/exceed the performance and dimensional requirements of SAE J1453.
9. Minimized unnecessary fittings and adapters, streamlining the system.
10. Increased connector accessibility, making assembly and maintenance easier.
11. Standardized the connector system on the unit.

6.4.3. Leak-Free Guarantee

An exclusive three-year leak free guarantee warrants the Seal-Lok, O-ring face seal connections to be leak-free for a period of three (3) year. NO EXCEPTION!

6.4.4 Diverter Valve

There will be an automatic electric over hydraulic three (3) position diverter valve located at the left side of the apparatus. This diverter valve

will divert hydraulic fluid to either the aerial ladder controls or the outrigger controls.

To prevent accidental operation of the ladder prior to the outrigger being set properly, the diverter valve will only allow hydraulic fluid to the outrigger controls until the outriggers are set properly.

To prevent accidental operation of the outrigger system during the aerial ladder operation the diverter valve will only allow hydraulic fluid to the ladder controls, when the aerial device is raised from the aerial travel support.

In the event of electrical failure the operator will be able to move the diverter valve to the ladder or outrigger position for continuous uninterrupted operation.

6.4.5 Outrigger System Hydraulic Control Valves

The outrigger cylinder system will be controlled by a pressure compensated, proportional control valve that is designed for parallel hydraulic circuit operations. The valve must be proportional type to provide the smoothest, precise operation of the outriggers.

This valve will be modular in design so that individual sections can be replaced in the field, rather than complete valve assemblies, thus reducing maintenance costs. The valve housings will be made of high tensile cast iron for durability and the individual spools will be hard, chrome plated for long life and resistance to corrosion. Each valve will be equipped with a heavy-duty electric solenoid for electric control of the outrigger from the remote operator's station and mechanical handles of ease in override operations. The mechanical handles will be equipped with large knobs with integral labels inside each knob indicating the function of the handle.

The outrigger valves will be controlled by the IQAN control system or equal. Adjustments and troubleshooting will be accessible from the MDM display at the turntable control station.

6.4.6 Lift, Extension And Rotation Hydraulic Control Valve

The lift, extension, and rotation systems will be controlled by a pressure compensated, proportional control valve. This valve will be of a modular construction that simplifies troubleshooting, minimizes downtime, and simplifies field service. The main control valve will be positioned at the turntable control console for direct manual control of each aerial function.

Adjustments and troubleshooting will be accessible from the MDM display at the turntable control station.

Use of electrical controls at the main turntable control console will not be acceptable.

6.4.7 Filters

Pressure and Return Filters shall be provided with bypass abilities. The pressure filter will have a bypass circuit protected by a check valve, which will be installed around the pressure filter. The pressure line filter will be required even if a suction line filter is provided in the reservoir due to the suction line filter's inability to trap contaminants entering the system.

The filter cartridges will have a sensor, which will indicate the condition of the filter and provide a warning device that will alarm if bypassed.

6.5 Emergency Hydraulic Pump System

In the event of failure of the main hydraulic pump or vehicle engine, the unit will be equipped with an emergency hydraulic pump which will be plumbed into the hydraulic system and be electrically driven from the chassis batteries. The emergency pump system will be capable of limited functions of the ladder and outriggers to stow the unit. The pump will be controlled from both the right and left outriggers and turntable control stations with spring loaded momentary contact switches.

The pump will have a separate hydraulic oil supply line, from the main supply line attached directly to the hydraulic oil reservoir. A shutoff valve for each line will be provided and check valves will be incorporated on the pressure side of both pumps to ensure that one will continue to operate the ladder in the event the other fails.

6.6 Outriggers

Two (2) double box beam "H" type out and down outriggers will be located below the turntable to provide vehicle stability during aerial tower operation.

Each outrigger assembly will have 2 Nylatron slide pads, to provide smooth operation and to extend the life of the outrigger.

The jack cylinders will be equipped with integral (on the cylinder) holding valves, which will hold the jack cylinder in either the stowed position or the deployed position should a hydraulic line be severed at any point within the hydraulic system. Each jack cylinder will also have a thermal relief system that will prevent the cylinder fluid pressure from rising due to fluid temperature increase.

The vertical jack cylinder rods will be fully enclosed by a telescopic inner steel jack box that will do the following:

1. Protect the cylinder rods against damage which may occur while on the fire ground.
2. Add lateral stability to the outrigger structure.
3. Provide a structure for installing safety pins.

Each vertical jack box will be equipped with a five position mechanical safety pin. The safety pins will be a minimum of 1" in diameter and secured by a heavy duty chain to the outrigger beam. Outrigger cylinder rods that are exposed and thus susceptible to damage will not be acceptable.

6.6.1 Jack Foot Pads

A permanently attached self-centering steel foot pad, 1/2" x 13.5" x 15.5" (209 sq. in.) will be provided on each vertical jack beam. Each foot pad will swivel longitudinal and require no adjustment during outrigger set-up.

Two (2) auxiliary outrigger pads will be provided for additional load distribution. Each auxiliary pad will be fabricated of 6061-T6 high strength aluminum alloy and have a handle for easy use.

The auxiliary pad will be secured in mounts located below the body compartments.

6.6.2. Outrigger/Ladder Interlock System

An interlock system will be provided between the outriggers and ladder that prevents the operation of the ladder until the operator places all jacks in the load supporting configuration. Each outrigger will be equipped with a pressure sensitive switch that closes only when the jack is firmly in contact with the ground. Until all jack switches close, electrical power will not be transmitted to the turntable (hence preventing ladder operation). A key controlled override switch will be provided at the central outrigger control station for emergency override of the interlock system. A green indicator light will be provided on the outrigger control panel to indicate the position of the foot pad. Illumination of the indicator light indicates firm ground contact.

6.6.3. Outrigger Deployment Warning Alarm

An outrigger deployment warning device will be provided to warn personnel in the vicinity of the apparatus that the outriggers are in motion. Whenever an outrigger control is utilized, the device will produce a pulsing tone, separate and

distinctive from that of other audible warning systems provided on the apparatus. When the outrigger control is released to its neutral position, the signal will cease.

6.6.4 Outrigger Lighting

Each outrigger will be equipped with the following light package:

1. One (1) double faced, 7" diameter, red flashing light mounted on the inside surface of the rear outriggers.
2. One (1) adjustable work light mounted under body to illuminate each outrigger foot pad area.

Both the flashing lights and the foot pad illumination lights will be energized by the ladder power circuit.

6.6.5 Outrigger Warning Lights

One (1) Whelen model 60R00FRR-LED, 4-1/8" x 6-1/2" red flashing LED light will be mounted on each of the outrigger cover panels, for a total of two (2). The light will be equipped with a chrome plated flange (6EFLANGE).

The outrigger warning lights will be energized by the ladder power circuit.

6.6.6 Outrigger Scotchlite

White ScotchLite material will be furnished on both sides of the horizontal and vertical beams of the rear outriggers. Decals reading "PULL PINS" will be provided on the rear of the outriggers beams to help the operator stow the outriggers.

6.6.7 Outrigger Controls

Two (2) illuminated electronic outrigger control stations will be provided on the forward section of the body to the rear of the gooseneck area, one on each side of the turntable. The control switches will be enclosed in a casted aluminum housing with an aluminum door, to protect each control from damage or accidental movement. The controls will be located such that the operator can see the outrigger he is operating. Body designs that block the view of the outriggers from the control station will not be acceptable.

Out and down outrigger control functions for the outriggers will be operated independently, so that vehicle may be set up in restricted areas or on uneven terrain. The diverter valve override control will be mounted behind the left side control panel.

A hinged outrigger control panel will be provided at the left side of the trailer gooseneck area. The panel will be equipped with a stainless steel hinged, which will allow the operator to access the diverter valve manual override control, outrigger manual override controls, the electrical system backup switch, and the rotation safety system reset button.

The main outrigger control station will incorporate the following:

- Four (4) outrigger set indicator lights
- One (1) ladder power indicator lights
- Rotation safety system override
- Fast idle switch
- Emergency pump control button with red indicator light
- Override key control with indicator light
- Waterway pressure gauge
- Panel light switch
- Warning decals
- "Hydraulic Filter Plugged" indicator light
- Hydraulic test ports

6.6.8 Outrigger Level

A bubble type leveling device will be provided at each outrigger control location to assist the operator aerial device setup. This level device will be mounted on the front face of the body panel and will be at eye level to the operator. The leveling devices will be color coded indicating the following conditions:

Green-----safe operating zone.

Yellow----caution operating zone.

6.7 Torque Box

The torque box will be steel side tubes which will be welded together within the gooseneck of the tiller trailer. The gooseneck will be an integral design housing the fifth wheel bearing plate, turntable lower bearing plate and the outrigger housings creating a torque box that will transfer all aerial loads to the outrigger. The torque box assembly will be equipped with two (2) integral "H" type, out and down outriggers.

A structural steel pedestal plate to support the turntable and secure the outriggers, trailer gooseneck and torque box as one integral unit. The torque box structure will transfer all aerial loads into the outriggers.

6.8 Turntable/Turntable Deck

The turntable will be fabricated steel designed for the rotation and elevation of the ladder sections. It will consist of the following:

- An aluminum tread plate deck that will cover the entire turntable frame, providing a large walking surface around the ladder. It will have a 1.5" downward flange on all four (4) sides.
- An aluminum tread plate access step mounted near the heel of the ladder to provide easy access to the ladder from the turntable deck..
- Turntable safety handrails mounted at the rear and sides of the turntable. The handrails will be 1.25" diameter polished finish grade 304 stainless steel tubing with an extruded grooves and the joining fittings will be polished chrome plated tees and elbows.

The turntable deck will be a free from obstructions as possible, due to the importance of this area when the vehicle is in a rescue mode. The turntable deck will allow easy access to the turntable even when the ladder is being operated over the rear of the vehicle.

Turntables with the drive motor or breathing air bottles mounted in any walking areas (front or rear) of the turntable will not be acceptable.

6.8.1 Cradle Alignment Indicator Arrows

Stainless steel arrows will be provided on the turntable surface in view of the operator when standing at the turntable control station. The arrows will assist the operator in indicating the alignment of the aerial ladder with the ladder travel cradle. The indicators will be overlaid with white ScotchLite material and suitably illuminated for nighttime operation.

The two (2) turntable handrail openings will be equipped with safety chains or bars at the rear of the turntable.

6.8.2 Hydraulic, Electric And Water Swivel

Hydraulic power to the turntable hydraulic circuits will be provided through a three port, high pressure, hydraulic swivel that permits 360° of continuous turntable rotation.

Electrical power to the turntable electric circuits will be provided by a collector ring assembly. The collector rings will be used for electrical ground, ladder control functions, and a 110 volt AC system during 360° of continuous turntable rotation.

Water will be transferred to the aerial waterway by means of a five (5) inch water swivel enabling 360° continuous rotation of the turntable.

6.8.3 Encoder

The swivel will be designed with an integral absolute encoder to provide a continuous output indicating the position off the turntable at any given time. The encoder will be designed to indicate position of the turntable even if power interruption occurs.

6.8.4 Rotation System

A external tooth monorace bearing will be provided for 360 degree continuous rotation of the water tower.

Both upper and lower bearing surfaces will be milled to ensure a true mounting surface for the rotation bearing. Units that weld the bearing to their mounting plates will not be acceptable due to the tremendous cost and down time involved in replacing a damaged or defective bearing.

A hydraulic driven planetary swing drive system will provide smooth and precise rotation. A spring applied, hydraulically released, disc type brake will be furnished on each gear box to provide positive braking of the turntable assembly against reactionary forces such as water and gravity.

6.9 Motion Control System

The ladder, outrigger system and interlock systems will be controlled with the IQAN hydraulic motion control system or equal. The IQAN system will provide state of the art controls for the ladder, outriggers, auto-level and interlock systems. IQAN is an electro-hydraulic management system that monitors operator inputs from the control station/s and converts this data to a usable electronic signal that controls hydraulic valve functions.

The turntable control station will be equipped with a Master Display Module (MDM), which has programmed parameters for each aerial device function, which provide for proper machine operation and reduce the possibility of abusive operation.

The MDM module is also capable of monitoring engine and transmission J-1939 parameters and warns the operator if there are any conditions of the motion control system out of the set ranges. The MDM display has built-in troubleshooting and will allow troubleshooting and function history monitoring for the entire motion control system. The memory function allows a service technician to identify if these warnings were ignored or overridden.

The IQAN system will receive rotation information from an absolute encoder located on the rotation swivel. The encoder will provide absolute position of the turntable at any given position from 0° to 360°.

A MDM information center shall be provided the aerial control station. The MDM display will allow the system to be diagnosed and calibrated without the need for separate controllers or computers.

The turntable MDM displays will indicate the following information from four on-demand screens:

- Elevation Angle of the ladder
- Continuous ladder height from the ground to the centerline of the ladder rung. (Per NFPA requirements)
- Continuous ladder horizontal reach from centerline of rotation to the centerline of the last ladder rung. (Per NFPA requirement)
- Degree of rotation from centerline of vehicle
- Body avoidance warning
- Short jack warning
- Cradle alignment
- Rung Alignment
- Breathing air level monitoring (if applicable)
- Ladder tip moment load monitoring

The turntable MDM display will indicate the following from automated warning/message screens:

- Cab and Body Avoidance - "Reverse rotation or raise ladder"
- "Moment Load Exceeded"
- Short Jack Left Side - "Reverse Rotation"
- Short Jack Right Side - "Reverse Rotation"
- Ramp Down ladder control
- Pressure Filter Status - "Warning - Pressure Filter In By-Pass Mode"
- Return Filter Status - "Warning - Return Filter In By-Pass Mode"
- Breathing Air Level - "Below 50% Air Level"
- Breathing Air Level - "Below 35% Air Level", Amber indicator light displayed
- Breathing Air Level - "Warning - Below 20% Air Level", Red indicator light displayed with audible alarm
- Breathing Air Level - "Warning - 0% Air Level", Red Amber indicator light displayed with audible alarm
- "Low Engine Oil Pressure"
- "High Engine Temperature"
- "Check Engine"

6.10 Engine Fast Idle Actuator

The fast idle actuator will be used to raise the engine RPM to a preset level for proper aerial operation. The fast idle switches will be located at the main outrigger control station and the aerial control station/s.

For the safety of personnel and equipment, the fast idle system will not activate unless the transmission is in neutral. **NO EXCEPTIONS**

6.11 Power Take Off (PTO) 12 Volt Switch

The apparatus will be equipped with a power shift PTO driven by the chassis transmission. An indicator light will be located in the cab next to the PTO switch to show when the PTO is engaged. The PTO for the hydraulic generator pump will be active at all times. The PTO will be a heavy duty pressure lubricated and cooled unit for extended operations.

A master 12 volt "Ladder Power" switch will be provided adjacent to the PTO switch for control of all ladder 12 volt power, except the emergency pump circuit.

7.0 Ladder Section Construction

7.1 General Design

The design and construction criteria:

1. Each section will be fabricated using high strength steel, welded together to form a structural unit.
2. All welding will be done by welders that have been certified in accordance with the American Welding Society Standard specifications.
3. Each ladder section will be constructed in an assembly fixture to ensure uniformity and interchangeability.
4. K-bracing at each rung will be utilized to minimize side deflection of the ladder.
5. All rungs will be 1-1/2" in diameter, spaced at 14" centers and be covered with serrated, replaceable rubber sheaths held in place with contact cement and metal clips for ease of replacement.
6. All rungs, K-braces, and diagonals will be positioned so that they are continuously welded to the ladder section.
7. All side rails will be protected from interior corrosion by coating the interior of the rail with a corrosion preventative film that meets military specifications number MIL-C-16173D.

Each rung will be equipped with a heavy duty serrated, replaceable rubber sheath to provide an antislip surface for fire fighting personnel. For additional safety, the covers will be constructed from a soft rubber to allow ice buildup to easily break off when the rung is stepped on by fire fighting personnel. This will be an added safety feature during water tower operation in cold weather conditions.

Ladder handrails and diagonal material are to be constructed from square or rectangular tubing, which provide a larger square inch welding surface were the materials are attached to each other. Use of round material is not desired due to less square inches of welding area associated with round materials.

7.2 BASE SECTION

Due to forces created by elevation and rotation, tensional or twisting moment is present in all aerial device designs. The base section will be constructed utilizing a 4" x 3" base rail and a 2" x 3" handrail. The two (2) rails will be welded together with diagonal sections, creating a truss structure which will support all weight and forces imposed by the lower mid, upper mid and fly sections.

To provide maximum overlap strength between the base and mid sections, a series of outer side wall reinforcements (Force Distribution Members) will be incorporated along the outer wall of the base section side rails on both sides. A minimum of five (5) force distribution members will be provided. These members will serve to strengthen the side rail overlap area to prevent overlap failure. They will be equally spaced beginning at 81" from the end of the base section. Each member will be a minimum of 1/4" wide and will extend from the bottom of the side rail to a point over the top inside edge of the side rail where it will join a formed channel welded on edge to the top inside edge of the base section side rail. All five (5) members on both sides will be permanently welded to the base section side rail, the base section top edge and the top edge reinforcement channel.

Internal stress reinforcements will not be allowed because they cannot be welded continuously to the interior of the base side rail components and the welds cannot be visually inspected after the ladder section is put into service.

7.2.1 ROOF LADDER MOUNT

A 16' roof ladder mount will be provided on the base section for mounting a roof ladder. The mounts will be constructed from aluminum and will be easily accessible from inside the ladder section or from the top of the body.

7.3 LOWER MID SECTION

Each base rail for the mid section will be formed structure to provide a full length integral channel for the upper mid ladder section to interlock to the mid ladder section.

The mid section will be designed with sufficient internal clearances to house the extension cylinders. This will allow the extension cylinder rods to be 100% enclosed and protected at all times from damage from icing, road dirt, water spray or fire fighting personnel from stepping on the cylinders when climbing the ladder.

This design will also keep the extension cylinder from obstructing the underside of the ladder.

7.4 UPPER MID SECTION

The upper mid section will be designed to transfer all loads from the fly section to the lower mid section.

7.5 FLY SECTION

The fly section will be designed specifically for the purpose of supporting fire personnel and related equipment for effective firefighting.

7.5.1 LADDER EGRESS

The tip of the fly section will be equipped with a bolt-on egress section to minimize the distance from the ladder tip to a window or roof when the waterway monitor is positioned at the ladder tip. The egress section will extend from the end of fly section 14" and taper down approximately 12-degrees. The egress will be designed to fully support the rated capacity of the ladder.

7.5.2 FLY SECTION REMOTE CAMERA

A remote camera suitable for extreme conditions of the fire service shall be attached to the fly tip that can be monitored and controlled from the turntable control console. The monitor screen should be a minimum of 7"x7" in size.

7.5.3 FLY TIP STEPS

Two (2) sets of folding steps will be conveniently located at the end portion of the fly section. These will be used for one person positioned parallel to the ladder. The steps will fold into proper position for usage and fold toward the sides of the ladder when not in use to provide adequate clearance when the ladder is being climbed. The steps will be placed approximately 70" & 98" from the center of the last rung toward the base of the aerial.

To assist in positioning of the ladder tip, the last six (6) feet of the fly section will be equipped with red ScotchLite material on the ladder handrails, diagonal braces and ladder base rail.

7.5.4 PIKE POLE MOUNTED IN FLY SECTION

There will be a 8' pike pole furnished and mounted in the ladder fly section. The mounts shall include an aluminum tube for the pole and a mechanical pin to secure the hook end of the pole.

7.6 AERIAL TRAVEL SUPPORT

A heavy duty rest will be provided to support the aerial in the travel position. Stainless steel bedding plates will be attached to the aerial base section to protect the aerial when the unit is in the travel position.

7.7 ELEVATION SYSTEM

Two (2) double acting lift cylinders will be attached between the turntable and the base section near the midpoint of the base section thus creating a better lifting geometry resulting in lower hydraulic operating pressures and improved load distribution on the base ladder section. The cylinders will function only to elevate the aerial device and not as a structural member to stabilize the ladder sideways. The lift cylinder rods will be attached to the base section with self aligning swivel bearings which prevent side loading on the lift cylinders resulting in longer cylinder seal life. They will provide smooth precise elevation from -5° below horizontal to $+80^{\circ}$ above horizontal.

The lift cylinders will be equipped with integral (on the cylinder) holding valves which prevents the ladder from lowering should a hydraulic line be ruptured at any point within the hydraulic system. They will also have a manifolding line with velocity fuses between the cylinders to prevent uneven cylinder lift and they will have both rod and piston hydraulic cushions. These cushions will decelerate the cylinder near the end of its stroke creating a smooth stop at full stroke.

7.8 LADDER INTERLOCK SYSTEM

A limit switch at the aerial travel support will be provided to prevent operation of the outriggers once the aerial has been elevated from the nested position. This system prevents operation of the outriggers once the ladder has been elevated from the nested position.

7.9 LOAD METER

The IQAN system shall incorporate an integral load meter, which will display load level on the aerial ladder proportionate to the maximum-rated low elevation load of the device. The load meter will calculate the current load and displays it on the MDM displays located at the turntable control console. The display instantly adjusts to changes in ladder angles, extension or live load.

The load meter system shall include:

- A pressure transducer installed in the hydraulic system. The pressure transducer is to have an accuracy of $\pm 1\%$.
- Bar Graph indicating moment load range.
- Actual percentage of moment load range.
- An audible horn mounted near the display.

7.10 ROTATION SAFETY SYSTEM

A Rotation Safety System designed to aid the aerial device operator in preventing the rotation of the aerial device into an over turning mode shall be provided. Controlled by the IQAN system, the Rotation Safety System senses outrigger extension and outrigger jack positioning in conjunction with the aerial device movement.

If the aerial device operator attempts to move the aerial device off vehicle center, and the outriggers are not fully extended on the direction of the rotation side, and all jacks in firm ground contact, the Rotation Safety System will sense this fault and will audibly and visually warn the operator to return the aerial device to the center line position. If the operator continues rotation into the short-jacked zone, the aerial device rotation will stop. When rotation is stopped, the Rotation Safety System will allow the operator to only rotate back to the fully jacked side of the vehicle.

7.11 Cab Proximity System

Controlled by the IQAN system, a cab proximity system will be provided on the rotation and elevation systems to alert the aerial device operator when rotating left or right at low angles and or lowering the ladder, toward the vehicle cab. The system will also automatically stop rotation or lowering functions when the device is in the defined zone regardless of the ladder rotation degree or elevation degree. When the system stops rotation towards the cab, the operator will only be capable of rotating in the opposite direction or elevate the ladder above the defined zone. If the system stops the lowering function when the ladder is in the defined zone over the cab, the operator will only be capable of raising or rotating the ladder away from the cab. The system will sound an audible alarm and display a warning message in the MDM display located at the control stations. The audible and visual warning message will stay activated until the operator moves the device from the defined zone.

7.12 Body Proximity System

Controlled by the IQAN system, a body proximity system will be provided on the rotation and elevation systems to alert the aerial device operator when rotating left or right at low angles and or lowering the ladder, toward the body. The system will also automatically stop rotation or lowering functions when the device is in the defined zone regardless of the ladder rotation degree or elevation degree. When the system stops rotation towards the body, the operator will only be capable of rotating in the opposite

direction or elevate the ladder above the defined zone. If the system stops the lowering function when the ladder is in the defined zone over the body, the operator will only be capable of raising or rotating the ladder away from the body. The system will sound an audible alarm and display a warning message in the MDM display located at the control stations. The audible and visual warning message will stay activated until the operator moves the device from the defined zone.

7.13 Extension Retraction System

A dual system of hydraulic cylinders and cables will provide full power operation of the extension and retraction modes. Each system will be capable of supporting the ladder in the event of failure of one of the systems. They cylinders will be used to extend and retract the mid-fly section and a cable system will be used to extend and retract the fly section.

Both cylinders will be equipped with two integral holding valves to protect both extension and retraction movement during water tower operations or in the event of a severed hydraulic line. Also, the cylinder barrels containing the hydraulic fluid must be anchored in the base section to keep the transfer of weight at full extension to a minimum. To keep maintenance at a minimum, both cylinders will be completely enclosed and protected inside the mid section side rail beams. This will ensure that the cylinder rods will never be exposed to the elements even at full extension. To minimize downtime, both cylinders will be easily removable from the rear of the vehicle by unbolting and sliding out. Both cylinders will be completely independent of the cable extension retraction system for the fly section, thus eliminating the need to disturb the cable system should cylinder maintenance be required.

The dual cable system will utilize a min. of two (2) 5/8" extensions and two (2) 1/2" retraction cables routed via two (2) pulley sets located on the forward and rear ends of the mid section from ten front end of the base section to the rear end of the fly section.

The device must be equipped with enclosed extension cylinders to provide the following features:

- The cylinders being independent from the cabling system.
- A clear and unobstructed underside of the base section and mid-section.
- Unexposed cylinder rods from heat, road grime, ice and foreign objects.

7.14 LADDER SLIDE MECHANISM

Nylatron slide pads will be used between the telescoping ladder sections. Slide pads will also be used to control side play between the ladder sections.

"NO EXCEPTIONS"

7.15 LADDER EXTENSION NUMBERS

ScotchLite numerals will be furnished on the inside of the ladder base section handrail, each side, to help the operator determine the distance the ladder is extended. The numbers will read in five foot increments.

7.16 Ladder Cable and Hose Routing System

All lines to the ladder tip will be enclosed and protected from the turntable to the ladder tip. All lines will be routed through the base section side rails and then through flexible aluminum conduits that travel under and over the mid section and end at the base of the fly section.

This system is required to reduce the maintenance problems associated with slip tubes and take-up pulleys.

Ladder designs which electrical lines, air lines and hydraulic line are exposed on the interiors of the ladder handrails will not be acceptable.

7.17 Aerial 120 Volt System

Two (2) 120 volt 20 amp electrical circuits utilizing 12 gauge five strand electrical cable will be provided to the tip. Circuits will be wired from the tip to the turntable through the collector ring assembly.

7.18 Tip Receptacle

One (1) 120 volt weatherproof outlet, Nema 5-15R, household type and an environmental cover will be furnished near the end of the fly section.

7.19 Ladder 12 Volt Circuit

All 12 volt electrical lines to the ladder tip will be enclosed and protected from the turntable to the ladder tip. All 12 volt electrical lines will be routed through the base section rails and then through flexible aluminum conduits the travel under and over the mid section(s) and end at the base of the fly section.

Ladder designs where electrical, air, or hydraulic lines are exposed on the interiors of the ladder handrails will not be acceptable.

Two (2) 4" shielded work lights will be installed at the base of the ladder in the turntable heel pin step.

Two (2) Collins spot/flood lights will be mounted at the rear of the base ladder section, one on each handrail. The lights will be equipped with a swivel base and an on/off switch on the light head itself.

Two (2) Collins spot/flood light will be mounted near the tip of the ladder, one on each side. The lights will be equipped with a swivel base and an on/off switch on the light head itself.

7.20 Control Station

There will be a control station at the turntable. All elevation, extension and rotation operational controls will operate from this position. These controls will be arranged to permit the operator to regulate the speed of these operations within the safe limits as determined by the manufacturer. Load instruction plates will be located at the control station to show the recommended safe load of the ladder. The control devices will be clearly marked and suitably lighted.

The turntable control station will be located on the left side of the turntable such that the operator can easily observe the ladder tip while operating the controls.

7.21 Turntable Control Station

The lower part of the console will be angled away from the operator, to provide as much foot room as possible for the operator.

An access door will be provided on the front of the console to provide complete access to the electrical and hydraulic components mounted inside the console.

The console will be illuminated for night operations, and will have the following controls/indicators:

The following items will be clearly marked:

- IQAN, MDM display
- Three (3) manual direct ladder control levers.
- A foot operated "dead man switch" that electrically opens the aerial control valve will protect against accidental movement of the control handles.
- Master electrical power switch with emergency shutdown capabilities.
- Rung alignment indicator light for ladder climbing operations.
- Cradle alignment indicator light.
- Engine fast idle control switch.
- Emergency pump power switch.

- 5,000 psi hydraulic oil pressure gauge (Liquid filled).
- Intercom controls
- Bubble type angle indicator on base section near console.
- Illuminated load chart on front of console.
- Hinged aluminum tread plate console cover over controls
- Electric Monitor Controls

7.22 Ladder Tip Controls

Ladder "Creeper Controls" will be provided at the tip of the ladder to allow a firefighter at the tip of the ladder to precisely move the ladder while at the ladder tip. Three (3) controllers will be provided to allow the firefighter to raise/lower, extend/retract or rotate the ladder at 20-30 percent of full function speed.

The controllers will be full function, locking, two-way joy sticks, which will be electrically multi-plexed to the lower controls for precise, proportioned and smooth ladder operation. The controls will be mounted within the fly section side rails, protected from obstructing the ladder egress or accidental movement.

The controls will be interlocked so the controllers will not operate without both ladder tip foot steps in the deployed position.

"NO EXCEPTIONS"

7.23 Communication System

An communication system will be furnished between the ladder tip and the turntable operator's position. The communication speaker at the ladder tip will require no operator attention to transmit or receive. The transmitting receiving volume controls will be located at the turntable operator's position.

7.24 Breathing Air System

A breathing air system will be furnished which will include one (1) 6000 psi, 509 cubic foot DOT air cylinder mounted on the right side of the ladder base section in accordance with federal DOT practices. Air bottles that are mounted forward of the lift cylinders on the turntable will not be acceptable due to obstructing access to the turntable when the ladder is rotated over the rear of the vehicle.

The breathing air system will be "pre-piped" from the turntable to the ladder tip using a Kevlar reinforced synthetic air hose. Air from the cylinder will be routed through the lower regulator to be reduced from cylinder pressure to airline pressure and then travels up and through the ladder sections to the ladder tip air filter and regulator located at the ladder tip.

Two (2) quick disconnects with plugs and retaining chains will be located at the ladder tip.

There will be a quick coupling at the turntable console for easy refilling of the breathing air system without disturbing the air bottle.

A fifty foot (50') refill hose will be provided as loose equipment with this system for recharging the air cylinder.

The breathing air couplings will be Schrader type coupling compatible with Scott air system. **"NO EXCEPTIONS"**

The IQAN system will monitor the breathing air level and display a message indicating air level on the MDM displays. A low breathing air alarm will be provided in the air line downstream from the high pressure regulator, which will activate a 95 DB fast pulse alarm mounted at the turntable and platform control stations if the breathing air pressure falls to or below the set percentages of the system capacity.

7.25 Aerial Water System

The aerial waterway system will be capable of being supplied by both a midship mounted pump (if required) and an external water source with the inlet on the left and right side of the apparatus.

The piping to the turntable swivel will be 4" black iron pipe. A 4" water swivel will be located in the riser pipe from the tee permitting 360 degree continuous rotation of the ladder.

A 4" heel pin swivel connection between the ladder waterway and the turntable swivel permitting water tower operations from -5 to +80 degrees will be provided.

An anodized aluminum telescopic waterway will be mounted beneath the center of the aerial ladder. The waterway will have a 4" base section tube, 3-1/2" lower mid-fly section tube, 3" upper mid-fly section tube and a 2-1/2" fly section tube.

The waterway will be secured to the ladder sections with cradle type mounts to provide a minimum of 2" of up and down movement in the waterway. This design will protect the waterway from bending if the ladder comes in contact with a building or a water hammer is imposed to the waterway discharge.

An automatic drain will be provided in aerial water way to automatically drain the system for freezing conditions. This valve will also act as a vacuum relief valve for the waterway when extending the aerial device with the discharges in the closed position.

A 2-1/2" relief valve preset at 225 psi will be located beneath the turntable to protect the water system from excessive pressures.

A 1-1/2" drain valve will be installed and operated from the side of the apparatus.

7.26 Left and Right Side Inlet Adapters

The left and right side rear aerial inlets will be equipped with a 5" Storz w/blind cap. Also with two (2) ea. 10' sections 5" hose with Storz connections and 2ea. Akron 2583 w/ 3 -2 1/2" female inlets and a 5" Storz outlet w/ drain valve.

NOTE: A 2.5" pressure gauge will be provided at each aerial inlet to indicate the waterway pressure gauge.

7.27 Aerial Monitor and Nozzle

An Akron model #3578 "StreamMaster" electrically controlled monitor will be installed on the outer end of the telescoping aerial waterway. The monitor relay box will be located on at the tip of the aerial, adjacent to the monitor, and will be easily accessible for service.

The monitor will be equipped with a 3-1/2" outlet and a 4" inlet.

The monitor will have a vertical sweep of 135°, and a horizontal sweep of 348°.

An Akron model #5078 "Akronmatic" electrically controlled master stream nozzle will be installed on the end of the monitor. The model #5078 will allow a maximum flow rate of 2000 gpm @ 80 psi.

The monitor and nozzle functions will be controlled from the tip of the fly section and from each of the aerial control consoles. The monitor and nozzle controls at the tip, turntable, and (optional pump panel) station will consist of three (3) individual spring-loaded, self-centering, weather resistant toggle switches. The monitor and nozzle control functions will be as follows:

- UP / DOWN
- LEFT / RIGHT
- STRAIGHT STREAM / FOG

The monitor will be equipped with an "Auto Stow" feature that will automatically deploy the monitor and will also place the monitor into its stowed position when actuated by a toggle switch.

7.28 "PINNABLE" Monitor Feature

The waterway monitor will be "pinnable", allowing the monitor to be secured at the tip of the fly section for water tower operations, or at the end of the upper section for rescue operations. A steel, sliding monitor support assembly installed at the end of the fly section waterway tube will guide the monitor along the base rails of the aerial fly section. A single, 6" x 5/8" hitch pin with a "D-ring" finger loop will secure the monitor support assembly to either the fly section or mid section. The "monitor pin" will be quickly movable and easily accessible at the tip of the aerial, when the ladder is fully retracted.

In "rescue mode", this feature will allow the tip of the fly section to be placed very close to the edge of a building or window, minimizing the working and access heights "on" and "off" the ladder tip, without worrying about the monitor being damaged. Permanent monitor guards installed below the tip of the aerial are unacceptable.

To accommodate the movement of the "pinnable" electric remote monitor, the monitor power/control cable for the electric monitor will be equipped with a quick disconnect plug and receptacle. The "monitor plug" will be easily accessed adjacent to the "monitor pin". Movable monitor designs that require a spring-rewind cord reel for the monitor power/control cord are unacceptable due to the additional cost, maintenance, weight and unattractive appearance associated with a cord reel permanently installed on the outside of the aerial base section.

7.29 Ladder Capacities

The following minimum ladder tip load capacities will be established with the truck level, the outriggers fully extended and lowered to relieve the chassis weight from the axles. Capacities are based upon full extension and 360 degree rotation.

(50 MPH WIND CONDITIONS / UNCHARGED WATERWAY)

DEGREES OF ELEVATION

	-5 to 20	20 to 30	30 to 40	40 to 80
Base Section	---	250	250	250
Lower Mid Section	---	---	250	250
Upper Mid Section	---	---	---	250
Fly Tip	500	500	500	500

WATER TOWER OPERATION

The ladder and water system will be designed to permit the following flows:

1. 1000 GPM at 90 degrees to ladder centerline either side.

2. 1000 GPM parallel to ladder centerline and as far below horizontal as nozzle design
3. 1000 GPM above ladder centerline as far as deck gun design allows.

**LADDER CAPACITIES IN POUNDS
(50 MPH WIND CONDITIONS / CHARGED WATERWAY)**

DEGREES OF ELEVATION

	-5 to 20	20 to 30	30 to 40	40 to 80
Base Section	---	250	250	250
Lower Mid Section	---	250	250	250
Upper Mid Section	---	---	---	250
Fly Tip	500	500	500	500

7.30 Painting

Prior to any painting, all weldments such as the outrigger beams, torque box, turntable, and ladder sections will be sand blasted, cleaned and inspected to insure the removal of any surface imperfections and to insure superior paint adhesion to the metal.

The entire painted system will utilize a single manufacturer's paint for compatibility between primers and finished coats. All painting will be done in atmosphere controlled spray booths. The weldments will then be primed. All seams between adjoining pieces that are not continuously welded will be caulked to inhibit corrosion.

Before assembly, in preparation for final painting, the aerial unit will be thoroughly cleaned, conforming to good painting practices.

The torquebox will be painted to match job color or the base color of the body, allowing easy touch-up after extended use.

The outrigger beams will be painted PPG enamel to match the torquebox job color, allowing easy touch-up after extended use.

7.31 Ladder Corrosion Inhibitor

All internal surfaces of the ladder exposed to the atmosphere, i.e., inside base, mid and fly section side rails will be undercoated prior to ladder assembly to prevent internal corrosion.

Section 8 Lighting

The total lighting system shall be installed according to DOT and NFPA guide lines. Where possible all lighting shall be led type light fixtures, unless other wise specified. Wiring data shall be provided with the completed apparatus. The following electrical equipment and lights shall be provided and installed

8.1 Non Emergency Lighting

8.1.1 Tail Lights Whelen Led

Two (2) Whelen 60R00XRR LED rectangular red stop/tail lights shall be provided and mounted at the rear of the body, one on each side.

8.1.2 Directional Lights Whelen Led

Two (2) Whelen Model 60A00TAR amber arrow directional signal LED lights shall be provided and mounted at the rear of the body, one on each side below the stop/tail lights.

8.1.3 Backup Lights Whelen Led

Two (2) Whelen Model 60C00WCR rectangular clear backup LED lights shall be provided and mounted, one on each side at the rear of the body. The backup lights shall be mounted below the rear stop/tail and directional lights.

8.1.4 Clearance Lights

The vehicle clearance lights shall be LED and recess mounted within the rear center tailboard step.

8.1.5 License Plate Bracket

A license plate mounting bracket shall be provided complete with a chrome-plated shielded indirect type light. Bracket shall be mounted at the rear of the apparatus body.

8.1.6 Compartment Lighting

All side and rear exterior equipment compartments shall be provided with LED clear compartment lights mounted to the side walls of the compartment. Compartment lights shall switch on automatically when the compartment door is opened and switch off when the door is closed.

A single master switch for compartment lights shall be install in the cab that will control all lighting in the compartments.

The wiring connection shall be made with a weather resistant plug in style connector.

8.1.7 Step Lights

Recessed 2-1/2” light with clear lens shall be provided to illuminate all step areas

8.1.8 Under Body Lighting

There shall be eight (8) lights mounted at 45 degree, under the trailer body four (4) on each side to allow for ground lighting.

8.1.9 Rear Deck Lights

Two (2) Unity #AG series, chrome-plated, six-inch rear mounted lights with swivel type mounting bracket and individual switches shall be provided.

Both lights shall be a 35-watt 75,000 candlepower spot lamp.

These lights will automatically activate when the vehicle transmission is in reverse gear.

8.1.10 Amber Marker Lights

A rectangular shaped clearance light with an amber colored lens shall be installed on either side of the apparatus body, recessed in the rub rails.

The amber marker lights shall be wired to the turn indicator as required on vehicles over 30’ long.

8.1.11 Engine Compartment Light

An engine compartment light shall be installed to illuminate the engine compartment.

8.1.12 Driver Side Scene Light

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted on the driver side of the cab. Light shall be mounted on an 18-degree downward angled, polished aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Driver's Side Scene Light".

The light shall be mounted on the pump house.

8.1.13 Passenger Side Scene Light

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted on the passenger side of the cab. Light shall be mounted on an 18-degree downward angled, polished aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Passenger's Side Scene Light".

The light shall be mounted on the pump house.

8.1.14 Recess Mounted Traffic Direction Bar

A Whelen Model TA-850L traffic advisor light bar, 44" long with eight LED modules, shall be provided and mounted facing the rear of the apparatus with control console mounted in the truck cab.

The traffic advisor shall be recess mounted into the rear of the apparatus body.

8.1.15 Work Light Switch

A single master switch shall be installed in the chassis cab and be labeled: "WORK LIGHTS".

The master switch shall operate the following lights:

- Step Lights
- Under Body Lighting
- Cab Ground Lighting
- Cab scene lights

8.2 Emergency Lighting

The upper and lower zones "A", "B", "C", "D" of the apparatus shall have the following emergency lighting equipment:

Lower Zones "A", "B", "C", "D" Emergency Lighting

8.2.1 Light Bar

One (1) Whelen model FN72VLED 72" light bar mounted on chassis cab roof to meet the NFPA upper zone A lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Light bar to have the following equipment:

- (8) LED assemblies
- "V" ends

8.2.2 Rear Warning

Two (2) Whelen model RB6PRP rotating beacons, and two (2) 60R00FRR LED lights mounted on the rear of the apparatus body to meet the NFPA Zone B, C, D upper level lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Each light to have the following equipment:

8.2.3 Upper Zone "B, C, D" Light Mounting

The upper rear lights designated for Upper Zone "B" shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

8.2.4 Zone A Front Lights

There shall be two (2) Whelen model 60R00FRR LED flashing lights furnished on the front face of the apparatus to meet the NFPA Zone A lower level lighting requirement.

8.2.5 Zone B & D Side Lights

There shall be three (3) Whelen model 60R00FRR LED flashing lights furnished on each side of the apparatus to meet the NFPA Zone B & D lower level lighting requirement. One LED light mounted as far forward as possible, one LED light mounted as far to the rear as possible, and one LED light mounted between the front and rear lights. The LED lights shall be connected to a flasher and be activated through the master emergency light switch located on the electrical console. Each light shall have a red lens.

8.2.6 Zone C Rear Lights

There shall be two (2) Whelen model 60R00FRR LED flashing lights furnished on the rear of the apparatus to meet the NFPA Zone C lower level lighting requirement.

8.2.7 Alternating Flashing Headlight System

An alternating flashing wig-wag system, wired to the apparatus headlights, will be installed. The wig-wag system will be individually switched at the master light console and wired through the load management system to be shut down when load management is required. Headlight flasher to be turned off when the park brake is set.

8.3 Telescoping Quartz Lighting

The light shall be attached to a side mounted, bottom raise telescoping, anodized aluminum pole. The telescoping pole shall have a four (4) foot extension with friction lock mechanism. The telescoping pole shall be pre-wired with heavy-duty retractile cord with pigtail extending out the bottom of the lower tube.

The telescoping light shall be Kwik Raze Magnafire 3000 model #KR-537-S.

The lights shall be mounted to allow personnel to raise the lights from the ground without having to climb on the apparatus.

8.4 Telescoping Tri-Pod Lights

Two (2) Kwik-Raze, model #KR-805-S telescoping tripod 500 watt quartz lights will be provided. The poles for the lights will be aluminum tubing that will be secured by aluminum mounting brackets. The lights will be top raise type lights, which will be securely mounted as directed by the fire department.

The tripod lights will be equipped with a pig tail cord equipped with appropriate 120 V plug and a weatherproof "on-off" switch on the light head.

One (1) 120 V, 15 amp receptacle will be provided and installed near the mounting position of each tripod light for a total of two (2) receptacles. Both receptacles will require one (1) 15 amp, 120 V circuit breaker to be installed in the load center.

8.5 Portable Quartz Light

Four (4) Kwik-Raze, model #KR-705-S portable 500 watt quartz lights will be provided and mounted as directed by the fire department. The lights will be equipped with a quick release type mount and an appropriate 120 V plug and a weatherproof "on-off" switch on the light head.

One (1) 120 V, 15 amp receptacle will be provided and installed near the mounting position of each portable light fixture for a total of four (4) receptacles. Four (4) receptacles will require two (2) 15 amp, 120 V circuit breaker to be installed in the load center.

8.6 Portable Quartz Lights Switching

The portable quartz lights will be wired through the circuit breaker panel and switched from the breaker panel via the circuit breakers.

A quartz light shall be provided and mounted on the tractor cab, wired to the 120-volt power source. The light shall be UL listed as "Scene lights for Fire Service Use". Light shall be controlled by a switch located on the generator powered sub panel.

SECTION 9.0 PAINT/FINISH

Apparatus Finish details must match as close as possible the newest fire apparatus in the existing Fulton County Fleet.

Two tone chassis color shall consist of a specified color of lead- free, chromate-free Medium solid acrylic urethane paint applied from the bottom of the window line up, including the roof. White paint shall be "2004 Ford Z-1" and red paint shall be "2004 Ford F-1". This paint break line shall match existing units in service in Fulton County.

All cab painting must be completed prior to the installation of glass, accessories or any other cab trim to assure complete paint coverage and maximum corrosion protection. The chassis frame and undercarriage components shall be finish painted black, and all exterior components shall then be re-mounted.

9.1 Paint Warranty

The paint system shall be warranted for 5 years against cracking, checking, peeling and loss of gloss caused by chalking or fading

9.2 Fulton County Logo

A Fulton County Logo shall be applied to the front doors, which matches the existing Fulton County Units. The Logo shall meet these specification **NO EXCEPTIONS**

Logo to be approximately 1' x 1' shall be screen printed FULTON FIRE/RESCUE.

Five spot colors printed on reflective white vinyl.

(White, Gold-PMS 110, Black, Red, Tan)

Clear Laminated and contour cut

Vinyl above the logo to read "FULTON COUNTY "

Vinyl below the logo to read "FIRE DEPARTMENT"

Metallic gold letter with black out line.

9.3 Scotchlite Retro-Reflective Stripe

A white **SCOTCHLITE** retro-reflective stripe shall be applied to the perimeter of the apparatus. The stripe shall be NFPA compliant with "Dial 911" cut into the stripe on the rear compartment doors

9.4 Sealing Of Vinyl Detailing

All edges of logos, stripes and lettering are to be sealed

9.5 Stay Back Sign

A sign, minimum 4" x 30", shall be painted white and lettered "STAY BACK 500 FEET" with reflective letters. The sign shall be securely attached to the rear of the apparatus.

9.6 Vinyl Reflective "Chevrons"

Vinyl reflective "Chevrons" or diagonal 4" striping shall be install on the rear of the body and on all outrigger jacks. The colors "Red" and "Lime Yellow" will alternate diagonally to provide a minimum of sixteen (16) square feet of coverage. Exact location/s will be determined at the Pre-Construction Conference.

9.7 Vehicle Numbering

A "U" shaped bracket for numbering plates shall be installed with screws and nylon spacers. The channel shall be formed by three (3) pieces of extruded aluminum or stainless steel "J" channel

There shall be two (2) plates one on each side of the body. Plates shall be 8-3/4" x 16" x 1/8" painted job color on both sides and have an 8" white **SCOTCH-LITE** number applied to one side only. (To be discussed at pre-construction conference)

9.8 Touch-Up Paint

There shall be one (1) quart of each color, touch-up paint furnished with the truck.

9.9 Gold Leaf Striping

Striping to be gold leaf mylar with black shading placed on both sides of the apparatus body. Striping to be applied to outer perimeter of body and have four (4) scrolls on each side. (To be discussed at pre-construction conference)

9.10 Reflective Safety Stripe

A 1" x 4" x 1" wide 3M brand Scotchlite #680-10 reflective multi-stripe shall be affixed to the perimeter of the vehicle. There shall be a 1" gap between each of the stripes. Striping shall be placed up to 60" above ground level and shall conform to NFPA reflectivity requirements. At least 60% of the perimeter length of each side and width of the rear, and at least 40% of the perimeter width of the front of the vehicle shall have reflective stripe.

The stripe shall be white in color.

The stripe shall be white on the cab and body and red on the unpainted roll up doors.

Section 10.0 Optional Equipment

The following list of optional items/equipment must be separately priced to allow the Fire Department to customize according to need and according to their budgetary requirements. If an item listed comes as standard equipment on the base model unit you are offering, and is included in the base unit price, please indicate “STD EQUIP” in the blank provided; otherwise the dollar amount bid on these items will be the additional costs(s) to the base unit quoted.

All prices quoted are to include all necessary labor and parts required to mount the loose equipment to the Fire Engine. Mounting locations will be determined and specified by the Fire Department.

10.1 Hand Tools (Wooden handles not acceptable)

Price Each

- 1. _____ Flathead axe, 6# weight (Zico FPC-6-E)
- 2. _____ Pickhead axe, 6# weight (Zico APC-6-E)
- 3. _____ Z-Hook head/gas shut off pike pole w/ solid fiberglass handle, 6 foot (Zico ZH-72-G)
- 4. _____ Z-Hook head pike pole w/ solid fiberglass handle, 8 foot (Zico ZH-96-D)
- 5. _____ Sheet Rock Hook with claw type head and “D” handle, foot (Zico PCC-6)
- 6. _____ Hooligan tools, 36 inch (Hooks Unlimited Pro-Bar 30")
- 7. _____ Pry bar, 36 inch
- 8. _____ Pry bar, 48 inch
- 9. _____ Dead Blow Rubber mallet 3 lb. (Zico SF-4)
- 10. _____ Bolt cutters, 36 inch, (Rigid Brand)
- 11. _____ Heavy Duty Steel Tool Box, containing the following tools:
 - 1- large vise grip
 - 1- small vise grip
 - 1- needle nose pliers
 - 1- 3 piece adjustable wrench set, small, medium, large

1- long nose vise grip	1- straight, heavy duty tin snips
1- lineman pliers	1- regular pliers
1- 9 1/2" arc joint pliers	1- 9 piece screw driver set
1- claw hammer (fiberglass handle)	1- 7" wide jaw diagonal cutting pliers
1- small pipe wrench	1- large pipe wrench
1- hack saw with extra blades	1- set of cold chisels
1- spring loaded center punch	1- ball peen hammer
1- key hole saw with extra blades	1- 3/8" socket set
1- utility knife with extra blades	1- large bastard file
1- professional quality impact goggles	

12. _____ Spanner wrench/Hydrant wrench set, Red Head, Mounting bracket #82009, spanner #101, Hydrant wrench #105
13. _____ Lock Out Kit – such as a Gall's #P-LT018 to include slim jim, under the window tool, button finger tool, slide lock tool, wedge, nylon case and manual.
14. _____ 4- Akron, hole type, 3/4" booster spanner wrenches
15. _____ Hydrant tool bag, Estex Mfg. Co. #2113-22, #4 canvas
16. _____ Forcible entry tool bag, Estex Mfg. Co. #2609F
17. _____ Ice chest, 48 quart
18. _____ Fire Rake (Zico FR-5)
19. _____ Double Face Sledge Hammer 10 lb. (Zico BD-10-ESG)
20. _____ Round point shovel (Zico RPS-DG)
21. _____ Square Point shovel (Zico SPS-DG)
22. _____ Zico Model SAC-44 Quic-Chok NFPA compliant folding wheel chocks mounted under the apparatus running boards in model SQCH-44H horizontal mounting bracket.
23. _____ Fire Hooks Unlimited MPH 6' multi purpose pike pole fiberglass Straight-handle and steel hook.
24. _____ Fire Hooks Unlimited MPH 8' multi purpose pike pole with fiberglass Straight-handle and steel hook.
25. _____ Fire Hooks Unlimited DWHS- 6' Dry Wall Hook.

26. _____ Fire Hooks Unlimited DWHS- 8' Dry Wall Hook.
27. _____ Fire Hooks Unlimited Pro-Bar 30" Halligan-type forcible entry tool.

10.2 Appliances

1. _____ Akron Hose Clamp to accommodate 3" hose
2. _____ Akron #3433 Deluge/Deck gun to include top mount fixture, stream shaper, stacked tips, and 1200 gpm fog nozzle, ground base, ground base mount.
3. _____ Akron Water Thief Style #1573
4. _____ Akron #2730, 2 1/2" fog nozzle
5. _____ Akron #1735, 1 3/4" break-apart fog nozzles with pistol grips, the fog tip shall come equipped with a stop that prohibits the fog from stopping the flow of water.
6. _____ Akron #2393, 2 1/2" playpipe
7. _____ Akron #2950, 1 1/2" to 1 1/2" 95 gpm foam eductor
8. _____ Akron #1718P, 1 1/2" fog nozzle
9. _____ Akron #1581, 2 1/2" to 1 1/2" gated wye
10. _____ Akron # Double males 2 1/2"
11. _____ Akron # Double females 2 1/2"
12. _____ Akron #772, three inch hose jacket with mounting bracket
13. _____ Barrel Strainer for hard suction, 6"
14. _____ Hydrant Valve, #1828
15. _____ Akron Foam Tube #768
16. _____ Akron Mercury Quick Attack Monitor #3443, with 4447 Fog nozzle, 2420 Stack Tips and Akron Storage bracket.
17. _____ Akron 4 Way Hydrant Valve # 627

18. _____ Akron Black Max Piston Intake valve # 7980

10.3 Fire Extinguishers

1. _____ ABC type dry chemical extinguisher with vehicle mounting bracket, #20

2. _____ CO2 extinguisher with vehicle mounting bracket #20

3. _____ 2 ½ gal pressurized water extinguisher with mounting bracket

10.4 Rope

1. _____ Utility rope – 7/16” Nylon Blue Water Kermantle, 150’ Hank/ unit
Gold/Blue **NO EXCEPTIONS!!!**

2. _____ Life safety rope – ½” Nylon Blue Kermantle, 200’ Hank/ unit ,orange/gold
NO EXCEPTIONS!!!

3. _____ Rope bags – large, orange

10.5 Foam

1. _____ Class “A” Foam, compatible with Hale Foam Master equipment in 5 gallon containers.

2. _____ 3/6% AFFF/ATC in 5 gallon containers

3. _____ "Fire Ade 2000" in 5 gallon containers

10.6 Salvage Equipment

1. _____ Tarps, Fire Department grade approximately 14’ x 18’

2. _____ Tubs, Square Bottom, galvanized, 18 ½” x 22 ¼” x 11 ½”
NO EXCEPTIONS

3. _____ Scoops Shovel, Nupla AGS-14

10.7 Lighting

1. _____ Alpha 2000 telescopic light poles with a 1000 watt, 220 volt quartz light shall be internally mounted in the body. The poles shall allow for 360

degree rotation of the light. A locking knob shall hold the poles at the desired height.

2. _____ Quartz, portable 500 watt, fire department grade, flood light will be provided. A vehicle mounting base will be provided. A portable, manual rewind, fire department grade, cord reel will be provided with 150' of yellow 2-3 wire. (Plugs will be Leviton 20A, 125V, **NO EXCEPTIONS**)
3. _____ Three prong twist lock receptacles, with weather resistance covers to be mounted on the body. Plugs will be Leviton 2-A, 125V, Location determined at pre-build conference. **NO EXCEPTIONS!!!**

10.8 Breathing Apparatus

1. _____ Self-contained breathing apparatus with 45 minute Kevlar bottle, NFPA approved, Scott NXG2 with integrated Scott pass device
NO EXCEPTIONS!!!
2. _____ Kevlar Air Bottles – 45 minute, Scott **NO EXCEPTIONS!!!**

10.9 Medical Equipment

1. _____ Monitor/Defibrillator Phyiso – Control – Lifepak 12
W/Battery Charger 110v
12 Lead Capable
Function also as Automatic External Defibrillation
Hands free defibrillation
Fax capability
Telementary capable
2. _____ Medical Bag: Iron Duck Oxygen Bag, (for “D” cylinder) Green with black sides.
3. _____ Suction Unit: Scott Fastvac #6953
4. _____ Adult/Pediatric Traction Splint (Home Traction Brand)
5. _____ Two (2) backboards – Composite (Folding Aluminum Acceptable)

10.10 Extrication Tools, Hurst – No Exceptions!!!

1. _____ Hurst Power Unit JL-4GH-SI Mod # 363R169
2. _____ Hurst Spreader ML-16S Mod # 362R196

- 3._____ Hurst JL MOC Cutter Mod # 362R386
- 4._____ Hurst Ram JL-60C Mod #257R099
- 5._____ Hurst Ram JL-20C Mod # 257R095
- 6._____ Hurst Ram JL-30C Mod # 257R097
- 7._____ Hurst Attachment Kit Mod # 257R037
- 8._____ Chain Set, part number 3640003
- 9._____ Hurst 30' low pressure hose (green) Mod # 353R090
- 10._____ Hurst 30' low pressure hose (orange) Mod # 3530022
- 11._____ Hoses, 2- 16' green #353R091
- 12._____ Hoses, 2- 16' orange #3530016
- 13._____ Hurst low pressure electric hose reel (orange) Mod # 542R040
- 14._____ Hurst low pressure electric hose reels (green) Mod # 542R047
- 15._____ Roll out trays and mounting for each piece of equipment.

10.11 Hose and Appliances

All hose couplings shall be American made such as Akron or Red Head.

"NO EXCEPTIONS"

- 1._____ Three (3) inch diameter, double jacket, Polyester fire hose with 2.5" couplings, (2000' in 50' section/unit) such as manufactured by North American.
- 2._____ One and three-quarter (1 ¾) inch diameter, double jacket, Polyester fire hose with 1.5" couplings, (800' in 50' sections/unit), such as manufactured by North American.
- 3._____ ft One and one half (1 ½) inch diameter, double jacket, Polyester fire hose, such as hose manufactured by North American (100', 50' and 5' sections/unit).

4. _____ ft Three (3) inch diameter, double jacket, Polyester fire hose with 2.5 couplings, such as hose manufactured by North American (10' and 25'/section)
5. _____ Five (5) inch diameter, double jacketed rubber lined supply hose in 30' sections with 5" Storz Connections
6. _____ Five (5) inch diameter double jacketed rubber lined supply hose in 100' sections with 5" Storz connections.
7. _____ 5" Storz x 2.5" male adaptor
8. _____ 5" Storz x 2.5" female adaptor
9. _____ 5" Storz x 4.5" NST w/ bar handles
10. _____ 5" Storz x 3" NST Female w/ 30° elbow
11. _____ 5" Storz blind cap
12. _____ 5" Storz to Two 2.5" male outlets (Wye)

10.12 Replacement/Extra Parts

1. _____ Replacement set of cooling system hoses
2. _____ Replacement set of belts
3. _____ Replacement set of filters
4. _____ Replacement power pack for strobes
5. _____ Replacement bulbs for light bar
6. _____ Replacement strobe tubes for "F-Head" Strobes
7. _____ Replacement set of case hardened tire chains and tighteners

10.13 Communication Device

1. _____ 35 Watt, 800 MHZ radio, such as a Motorola Spectra C-9 with antenna radio, installed

2. _____ 800 MHZ portable radio with rapid charger, such as a Motorola MTS 2000, shipped loose
3. _____ Motorola Mobile Data Terminal, Mobile Work Station 520, with modom, radio and vehicle mounting
4. _____ Panasonic Tough Book Laptop

10.14 Miscellaneous Equipment

1. _____ A Dura-Deck compartment floor protection in sufficient quantity to be placed on all compartment and shelf floors.
2. _____ Ziamatic air pack brackets with air straps and double dip clips. For use with 45 minute Scott Kevlar air bottles.
3. _____ Akron 2443 - spanner/hydrant wrench holders, to include 2 spanner wrenches and one (1) universal hydrant wrench.
4. _____ Akron 373 EZ-LOK, 2 ½ inch nozzle vehicle brackets.
5. _____ Akron AS510 and AS520, axe brackets
6. _____ Akron PPBH- Prybar holders, chrome
7. _____ Mounting bracket for Hooligan tool
8. _____ Nozzle cups with chrome plated, top mount bracket, for use with Akron Booster nozzle.
9. _____ Zico Model SAC-44 Quic-Chok NFPA compliant folding wheel chocks mounted under the apparatus running boards in model SQCH-44H horizontal mounting bracket.
10. _____ Supervac, 18" Honda, gasoline fired fan w/ hour meter
11. _____ SL40 Streamlights (Spot/Flood) with 12 volt mountable chargers
12. _____ Ventura brand PPV 18" with Honda engine w/ hour meter
13. _____ Zico Model SAC-44 Quic-Chok NFPA compliant folding wheel chocks mounted under the apparatus running boards in model SQCH-44H horizontal mounting bracket.
14. _____ Life belt(s) with pompier hook (various sizes)

10.15 Ground Ladders

1. _____ALCO-LITE Model PEL-24
2. _____ALCO-LITE model PRL-14
3. _____ALCO-LITE model FL-10
4. _____ALCO-LITE model CJL-10
5. _____ALCO-LITE 35' – Two section ladder

SECTION 6

**Pumper Side Mount Pump Panel
BID PRICING SHEET
LEASE (STRAIGHT OUT LEASE)**

Quantity of Vehicle	7 Year Lease	8 Year Lease	9 Year Lease	10 Year Lease
1 - 5	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
6 - 10	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
11 - 15	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
16 - 20	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
21 - 25	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
26 or more				
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$

Fulton County reserves the option to select type (Lease, Purchase or Lease/Purchase with option to buy) vehicles based on pricing submitted by the bidder under this bid.

COMPANY:_____ SIGNATURE:_____

NAME:_____ TITLE:_____ DATE:_____

Pumper Side Mount Pump Panel PURCHASE (STRAIGHT OUT PURCHASE)

Quantity of Vehicle	Price Based on Quantity to Purchase
1 - 5	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$
6 - 10	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$
11 - 15	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$
16 - 20	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$
21 - 25	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$
26 or more	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$

Fulton County reserves the option to select type (Lease, Purchase or Lease/Purchase with option to buy) vehicles based on pricing submitted by the bidder under this bid.

COMPANY: _____ SIGNATURE: _____

NAME: _____ TITLE: _____ DATE: _____

Pumper Side Mount Pump Panel LEASE/PURCHASE

Quantity of Vehicle	7 Year Lease	8 Year Lease	9 Year Lease	10 Year Lease
1 - 5	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
6 - 10	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
11 - 15	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
16 - 20	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
21 - 25	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
26 or more				
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$

Fulton County reserves the option to select type (Lease, Purchase or Lease/Purchase with option to buy) vehicles based on pricing submitted by the bidder under this bid.

COMPANY:_____ SIGNATURE:_____

NAME:_____ TITLE:_____ DATE:_____

**TDA Aerial Truck
BID PRICING SHEET
LEASE (STRAIGHT OUT LEASE)**

Quantity of Vehicle	7 Year Lease	8 Year Lease	9 Year Lease	10 Year Lease
1 - 5	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
6 - 10	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$

Fulton County reserves the option to select type (Lease, Purchase or Lease/Purchase with option to buy) vehicles based on pricing submitted by the bidder under this bid.

COMPANY:_____ SIGNATURE:_____

NAME:_____ TITLE:_____ DATE:_____

TDA Aerial Truck

PURCHASE (STRAIGHT OUT PURCHASE)

Quantity of Vehicle	Price Based on Quantity to Purchase
1 - 5	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$
6 - 10	Purchase Price: \$
	Yearly Maintenance Cost: \$
	Warranty Cost: \$

Fulton County reserves the option to select type (Lease, Purchase or Lease/Purchase with option to buy) vehicles based on pricing submitted by the bidder under this bid.

COMPANY:_____ SIGNATURE:_____

NAME:_____ TITLE:_____ DATE:_____

TDA Aerial Truck LEASE/PURCHASE

Quantity of Vehicle	7 Year Lease	8 Year Lease	9 Year Lease	10 Year Lease
1 - 5	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$
6 - 10	\$	\$	\$	\$
Yearly Maintenance Cost	\$	\$	\$	\$
Warranty Cost	\$	\$	\$	\$

Fulton County reserves the option to select type (Lease, Purchase or Lease/Purchase with option to buy) vehicles based on pricing submitted by the bidder under this bid.

COMPANY:_____ SIGNATURE:_____

NAME:_____ TITLE:_____ DATE:_____